Labour market outcomes of education: evidence for selected non-OECD countries

Michaelowa, Katharina ; Waller, Marie

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Katharina Michaelowa
Marie Waller

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Hamburgisches Welt-Wirtschafts-Archiv (HWWA)
Hamburg Institute of International Economics
Öffentlichkeitsarbeit
Neuer Jungfernstieg 21 • 20347 Hamburg
Telefon: 040/428 34 355
Telefax: 040/428 34 451
e-mail: hwwa@hwwa.de
Internet: http://www.hwwa.de

Katharina Michaelowa (HWWA)
Tel.: 040/42834-291
e-mail: k-michaelowa@hwwa.de

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Abstract

Based on recent data collected by the UNESCO Institute of Statistics and the OECD in the context of their joint "World Education Indicators" project, labour market outcomes of education can be reassessed for selected non-OECD countries (Brazil, Chile, Indonesia, Malaysia, Peru, Thailand and Uruguay) integrating particularly interesting characteristics of developing country labour markets such as high underemployment and informal sector employment. These specific data, available by level of educational attainment, gender and age, have not yet been published and are presented for the first time within this report.

Based on the new information available, some light can be shed on ongoing discussions about perceived differences between OECD and non-OECD countries with respect to labour market outcomes of education. In fact, once the important characteristics of underemployment and informal sector employment are taken into account, the link between education and labour market prospects no longer differs significantly between the two country groups. In both groups, employment prospects, earnings and labour market participation tend to be positively related to the level of educational attainment. Across all levels of education, young people and women tend to be in the most unfavourable situation. However, gender discrepancies with respect to employment prospects appear to be more important in non-OECD than in OECD countries, and no structural trend can be observed that would indicate an improvement of the situation over time.

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1 Introduction

Several features are characteristic of the link between educational attainment and labour market outcomes in industrialised countries. First, a higher level of education is associated with better chances on the labour market: more highly educated people face a lower risk of unemployment (OECD 2001, pp. 270f.). Moreover, they have higher chances of being employed on stable life-time contracts (European Commission 2002, Ch A). Finally, their incomes from work are above the incomes of those with lower educational attainment (OECD 2001, pp. 299f.).

Second, besides having better chances on the labour market, more highly educated people also tend to participate more frequently in the labour force (OECD 2001, pp. 267ff.). And third, irrespective of their level of educational attainment, women and young people generally lag behind with regard to the labour market indicators mentioned above (European Commission 2002, Ch. A).

Are these characteristic links between educational attainment and labour market outcomes similar for non-OECD countries? Or do labour markets in developing countries show different features which prevent these similarities? This report represents an attempt to answer these questions on the basis of new data for selected non-OECD countries collected by UNESCO and OECD in 2001 as a part of their joint World Education Indicators (WEI) pilot project. Some of these data have been published in OECD (2000), but the particularly interesting information on underemployment and informal sector employment by level of education has remained unpublished until now.[1]

In the literature available so far, the links between education and labour market outcomes appear to be much less clear for developing countries. In particular, the positive relationship between education and lower unemployment does not seem to hold (see e.g. Carlson 2001, p. 21, based on data from OECD 2000). However, analysis has been limited by the fact that internationally available data on labour market outcomes of education in non-OECD countries are scarce and incomplete. While the ILO provides some education related labour market indicators, the population outside the labour force is not taken into account. The ILO indicator of unemployment by educational

[1] The electronic version of the full data set (UNESCO/OECD 2001a) is available from the OECD or from the authors (Contact: Karine Tremblay: karine.tremblay@oecd.org or k-michaelowa@hwwa.de).

attainment (ILO 2002, pp. 351ff.) for instance, allows a distinction among the unemployed according to their level of education, but no conclusion with respect to the share of the unemployed among people with a certain educational attainment. Moreover, the ILO does not provide any education related complementary information on underemployment and / or informal sector employment, two important characteristics of developing countries' labour markets. Finally, the ILO has not yet adopted the revised international standard classification of education (ISCED 97) so that any comparison with education related indicators from OECD and UNESCO is rendered rather difficult.

The data available from the UNESCO/OECD WEI project presented in this report do allow a much more detailed analysis of the link between education and labour market outcomes, and they are directly comparable to data from OECD countries (see OECD 2001, Ch. E). However, since full information on underemployment was considered crucial to complement the data on unemployment and labour force participation, the number of countries covered by this report is rather limited. Among the 16 countries covered by the WEI report in 2001 (UNESCO/OECD 2001b), only seven countries met the minimum data requirements for this study. These countries are: Brazil, Chile, Indonesia, Malaysia, Peru, Thailand and Uruguay.

While the number of countries is thus very limited, their spread over two continents (Asia and Latin America) and various levels of economic development appears to ensure enough variation to make the data set relevant for researchers and policymakers across the world. This report provides a detailed description of the data as well as some initial analysis. Following these introductory remarks, section 2 discusses the coverage, advantages and shortcomings of the data, and also provides the definitions of labour market indicators and educational classifications used throughout the report. Sections 3 to 6 actually present the data and try to compare the evidence for the countries covered here with the evidence for OECD member states. Section 7 concludes.

2 Country coverage, data and definitions

The data refer to seven WEI countries of which four are from Latin America, and three from Asia. The four Latin-American countries, Brazil, Chile, Uruguay and Peru, as well as the three Asian countries, Indonesia, Malaysia and Thailand, vary widely in terms of economic and human development. While Chile, Malaysia and Uruguay come relatively

close to the living standards of some OECD countries, Indonesia and Peru show much more strongly the characteristics of typical (low income) developing countries. Thailand and Brazil may be classified as somewhere in between. Table 1 provides an overview of their ranks in terms of a few general development indicators.

Table 1: General indicators of development, 2000

	GDP per capita (US$, PPP)	Life expectancy at birth (total years)	Illiteracy rate (% of population aged 15 or above)
Chile	9417	76	4
Malaysia	9068	73	13
Uruguay	9035	74	2
Brazil	7625	68	15
Thailand	6402	69	5
Peru	4799	69	10
Indonesia	3043	66	13
For reference:			
Low income countries	2012	59	38
OECD countries	27821	78	..

Note: Countries listed in descending order with respect to their GDP per capita.
Source: World Bank (2002).

Given the relatively wide range of development levels covered by these countries, it should be possible to get some idea about potential links between education and the labour market. The available data on labour market outcomes of education can therefore be expected to provide some interesting insights, not only with respect to the individual countries concerned, but also beyond the national level in a more strategic international perspective.

The following statistical indicators are available from the WEI data set:

- total population, labour force, unemployment and underemployment by level of educational attainment, gender and age (for all seven countries),
- informal sector employment by level of educational attainment, gender and age (for Chile, Peru and Thailand)
- mean incomes from work by level of educational attainment, gender and age (for Brazil, Chile, Peru, Thailand and Uruguay)

All data refer to the reference year 1998. They were collected through national household and labour force surveys or represent projections from population censuses

and were reported to the OECD by the WEI country representatives. Coverage and reliability of the data vary across countries. For national sources and data collection methods (as far as available) see Box 1. Detailed definitions of the indicators requested and of minimum standards to ensure the quality and the comparability of the data were provided to the country representatives with the WEI questionnaires (UNESCO/OECD 2000a). Boxes 2 and 3 provide a brief overview over the most relevant definitions with respect to the classification of educational attainment and the labour market statistics respectively.

Box 1: Original data sources and methods

	Source:	**Method:**
Brazil	IBGE - Instituto Brasilieiro de Geografia e Estatística	Estimations based on the 1998 national household survey *Note:* Survey excludes rural areas of northern states.
Chile	INE - Istituto Nacional de Estadísticas	Projections based on the population census of 1992; national survey of employment
Indonesia	Ministry of Education	Projection of population census
Malaysia	Department of Statistics Malaysia	Vital registration and census (component method based on natural increase); 1998 labour force survey
Peru	INEI - Istituto Nacional de Estadística e Informática	1998 household survey
Thailand	National Statistical Office (NSO) Office of the Prime Minister	Labour force survey
Uruguay	Instituto Nacional de Estadística	1998 permanent household survey and projections based on the census of 1996

While information on population, labour force participation and unemployment is based on relatively well established international definitions, definitions of underemployment, informal sector employment and mean incomes from work vary significantly from country to country and could not always be fully adjusted to the common definitions requested in the WEI questionnaire. The most important problems arise with respect to mean incomes from work. Brazil and Chile report that mean incomes from work also include payments in kind and services while this is not the case in Peru. Other differences appear regarding the inclusion or exclusion of income taxes and contributions to health and pension schemes. With respect to underemployment, the upper limit of working time above which there is no underemployment varies between 30 hours in Brazil and Malaysia and 40 hours in Uruguay (UNESCO/OECD 2000b). Concerning informal sector employment, little information is available on concrete

operationalisation criteria such as the maximum size of the firm and the non-registration criterion which can be expected to vary significantly across countries. All in all, even though some of these problems can be taken into account using the appropriate indicators, it is clear that caution is required when interpreting the results.

Box 2: The International Standard Classification of Education (ISCED 97)

ISCED:		
0	***Pre-primary*** Initial stage of organised instruction, designed primarily to introduce very young children to a school-type environment.	
1	***Primary*** Normally designed to give students a sound basic education in reading, writing and mathematics.	
2	***Lower secondary*** The lower secondary level of education generally continues the basic programmes of the primary level, although teaching is typically more subject-focused, often employing more specialised teachers who conduct classes in their field of specialisation.	
3	***Upper secondary*** The final stage of secondary education in most OECD countries. Instruction is often more organised along subject-matter lines than at ISCED level 2 and teachers typically need to have a higher level or more subject-specific qualification than at ISCED 2.	
4	***Post-secondary non tertiary*** These programmes straddle the boundary between upper secondary and post-secondary education. They are often not significantly more advanced than programmes at ISCED 3 but they serve to broaden the knowledge of participants who have already completed a programme at level 3. The students are typically older than those in ISCED 3 programmes.	
5a	***First stage of tertiary education*** ISCED 5 programmes have an educational content more advanced than those offered at levels 3 and 4.	ISCED 5A programmes that are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements.
5b		ISCED 5B programmes that are generally more practical/ technical/ occupationally specific than ISCED 5A programmes.
6	***Second stage of tertiary education*** The level is reserved for tertiary programmes that lead to the award of an advanced research qualification. The programmes are devoted to advanced study and original research (e.g. Ph.D. programmes).	

Source: UNESCO/OECD (2001b, p. 206).

With respect to the definitions of educational attainment, the relatively recent transition to the revised international standard classification ISCED 97 may have caused some difficulties as well. In particular, the technical tertiary education programmes (ISCED 5b) often remained unspecified, and even where this category was taken into account, countries apparently tended to include only a selection of the relevant programmes. Moreover, post-secondary, non tertiary education (ISCED 4) has not been specified separately by any country considered here. In Chile, Indonesia and Uruguay

this category does not exist and in the remaining countries it must be expected to be included in either upper secondary (ISCED 3) or tertiary education (ISCED 5). In Peru, the combined category ISCED 5a/6 only includes ISCED 5a.

Box 3: Labour market statistics - definitions

Employment
All persons above a specified age who were in paid employment or self-employment during a given brief reference period, both in the formal or the informal labour market, are defined as employed. This definition includes persons with a formal attachment to their job, but temporarily not at work (e.g. due to holidays or illness). It also includes students who are in paid employment or self employment in addition to their studies, as well as unpaid family workers.

The employment rate specifies the employed as a proportion of the labour force.

Unemployment
All persons not employed during the reference period, but available for work and seeking work, are defined as unemployed. The unemployment rate relates the unemployed to the labour force.

Labour force / economically active population
The labour force (economically active population) includes all persons who are either employed or unemployed. The labour force participation rate refers to the labour force as a percentage of total population (of the relevant age). Persons who are not in the labour force are considered as economically inactive (e.g. children, retired persons or persons not seeking employment for other reasons).

Discouraged Workers
Discouraged workers are a sub-group of the economically inactive population whose main reason for not seeking employment is the belief that no employment is available.

Underemployment
The notion of underemployment used here is limited to time-related underemployment. All persons employed, but working less than a specified national threshold (e.g. 40 hours per week) and willing and available to work additional hours in the same job or an additional job, are defined as underemployed, even if they are not actively seeking work.

Informal sector employment
The informal sector is characterised by units of production with the primary objective of generating employment and incomes to the persons concerned. These units typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale. Labour relations - where they exist - are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees. A person having at least one job in an informal sector unit during the reference period is considered as employed in the informal sector. The informal sector employment rate refers to persons employed in the informal sector in relation to the total labour force.

Mean incomes from work
Mean incomes from work are annual money earnings as direct payment for labour services provided, before deductions are made for the contributions to health insurance, unemployment, pension or other schemes, as well as for personal income taxes. They include remuneration for time not worked such as annual leave, holidays, sick leave, and maternity leave. Work related earnings of self-employed persons are also included.
Source: UNESCO/OECD (2000a, pp. 7ff.); own additions for additional terms used in this report.

A further problem arises with respect to the age group 19-24 of which a high proportion is still studying. Apparently, working students or students looking for work have not uniformly been considered part of the labour force. To avoid possible interpretation problems, the statistics presented in this report will therefore be based only on the age group 24-64 if not otherwise indicated.

With respect to the interpretation of the individual country data, it should be noted that in Indonesia, the reference year 1998 corresponds to the peak of the Asian crisis which certainly had some influence on the results[2]. The quality of the data seems to have suffered as well, since clear inconsistencies can be observed with respect to some segments of the population. The problem primarily concerns male labour force participation at the lowest ISCED level as well as un- and underemployment of highly skilled women above the age of 45. Both rates are reported to lie above 100%. The figures have been reduced to 100% for the purpose of this report. In Peru, the reliability of the results may suffer from the rather small sample size (7200 households) which leads to a low number of observations for some combinations of educational and labour market specifications. In this country as well, corrections of the original data had to be effected with respect to one specific segment of the population (see note below Figure 7). In Brazil, a bias may arise because the rural areas of the two northern provinces were not taken into account. However, this area is barely populated so that the problem should not be too severe.

All in all, it must be concluded that the quality and comparability of the data presented here is not unproblematic. Nevertheless, given that these are the only existing data of this kind, they certainly deserve being looked at more closely and being made available to a broader public. The following sections will show that, despite all shortcomings, closer analysis of these new data is worth the effort.

2 This is also true for Malaysia and Thailand, but to a lesser extent.

3 The impact of education on the employment situation

Does education increase the chances to find employment? While the answer is clearly positive for OECD countries, there is an ongoing debate about the issue for developing countries. As opposed to the situation in industrialised countries, unemployment in developing countries appears to be particularly low at the lowest levels of educational attainment. Unemployment seems to be a problem of the highly educated rather than the uneducated segments of the population. Is this impression real or does it reflect data deficiencies or even a misinterpretation of existing information? What can the WEI data (UNESCO/OECD 2001a) contribute to the debate?

Before answering this question in sections 3.2 and 3.3, section 3.1 gives a brief overview over the overall employment situation in the seven countries covered by this report.

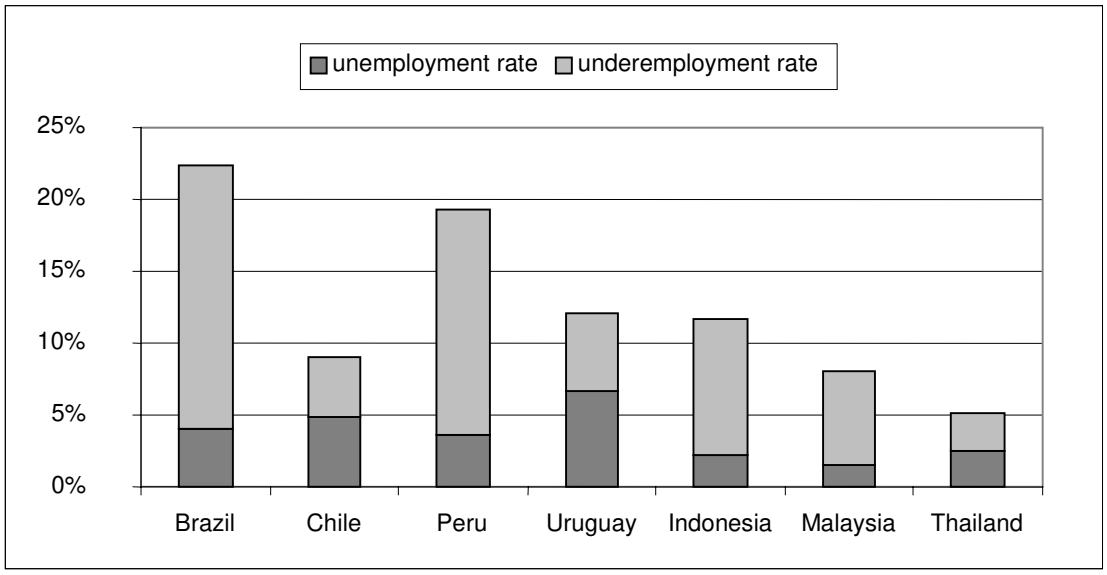
3.1 The overall employment situation

Looking at unemployment rates, at a first glance, the labour market situation in all seven countries appears to be surprisingly positive. For the population aged 25-64, all three Asian countries show unemployment rates at or below 2.5% despite the reference year 1998 at the peak of the Asian crisis. And even in the four Latin-American countries, the unemployment rate remains below 7 %. Taking all seven countries together, unemployment rates vary between 1.47% in Malaysia and 6.62% in Uruguay. Many OECD countries would be happy with these rates, since their own figures go far beyond. France, Finland, Greece, Italy and Spain for instance, had unemployment rates significantly above 10% during the same reference year (World Bank 2002).

How can this evidence be reconciled with the fact that at least in Latin America, labour market problems are considered by the local population as the single major problem of their countries (Duryea, Jaramillo and Pagés 2001, p. 2)? One answer could be that unemployment is particularly strong among the younger population not taken into account within the age group 25-64 considered here. Section 6 will show that there is some truth about this argument. However, the main issue is yet another one: Unemployment, taken alone, is simply a very inadequate indicator of the employment situation in developing countries.

Many people in developing countries will do anything to find at least some work. If they have worked even for a period of just one hour during the reference period, they will statistically be considered as employed. This definition of unemployment is highly inadequate to capture the labour market problems in developing countries. Despite being "employed" according to international statistical indicators, many people are looking for work and available for work, since their current employment is insufficient. This situation is captured by the notion of underemployment. Figure 1 shows, that once underemployment is taken into account, the labour market situation does look much less bright as before. In 1998, in Brazil and Peru, more than 15% of the labour force aged 25-64 were hit by underemployment. In four countries, un- and underemployment together were significantly higher than 10%. Grouping countries by geographic region, on average, despite the Asian crisis, labour market problems appear to be much stronger in Latin America (four countries to the left in Figure 1) than in East Asia (three countries to the right).

Figure 1: Un- and underemployment, 1998

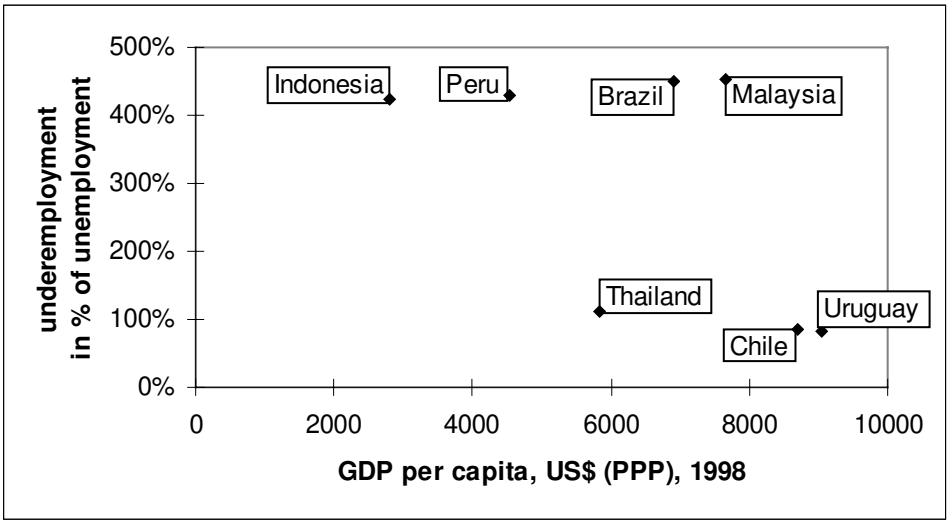


Note: Countries listed by region, in alphabetical order.
Source: UNESCO/OECD (2001a).

The relative importance of underemployment as compared to unemployment appears to be related to the countries' level of economic development. In Chile and Uruguay, two countries with a relatively high per capita income, underemployment is less predominant than unemployment. Conversely, in Brazil, Indonesia and Peru, per capita income is relatively low and underemployment is more than four times as frequent as

unemployment. Figure 2 which relates the two indicators for the year 1998 shows no linear correlation but rather suggests a level effect at a threshold of about 8000 US$.[3] The only obvious exception is Thailand where the relative importance of underemployment is not much stronger than in Chile and Uruguay despite a GDP per capita below 6000 US$.

Figure 2: The relative importance of underemployment as a function of economic development

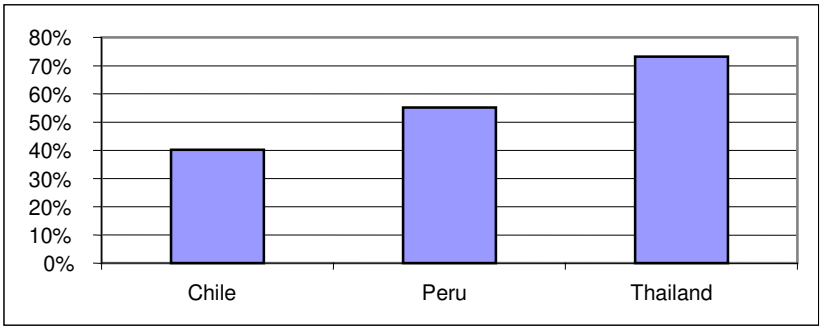


Note: Since un- and underemployment data are only available for the year 1998, GDP per capita refers to the same year. This implies slight differences in the country ordering as compared to Table 1.
Sources: UNESCO/OECD (2001a); World Bank (2002).

It can be concluded that in middle- and - even more - in low-income countries, underemployment is an indispensable complementary measure to assess the situation on the labour market. But even un- and underemployment taken together may not suffice to capture the full extent of the problem. Informal sector employment is another employment category to be considered. It is irrelevant for high-income OECD countries, but highly relevant for low- and middle income countries. Among the three countries for which data are available in the WEI data set, Chile is the economically most advanced, but still displays an informal sector employment rate of 40%. In Peru and Thailand, informal sector employment as a share of the labour force amounts to 55% and 73% respectively (see Figure 3).

3 Obviously these are only tentative inferences given the small number of observations.

Figure 3: Informal sector employment, 1998



Note: Slide downward adjustment of original data for Peru (see note on Figure 7).

Source: UNESCO/OECD (2001a).

These high rates imply a considerable segmentation of the labour market. Minimum wages, social security coverage and other formal regulations only hold for the "primary", and not for the "secondary" (informal) sector. By definition, informal sector enterprises are not officially registered, they generally don't pay taxes, and they do not have employees on formal contracts. Both factors lead to considerable job insecurity. If, at one point, the tax collector is not willing to "overlook" the existence of a firm any more, and claims belated payments for preceding years, the whole business may not be able to survive. Moreover, earnings in the informal sector tend to be relatively low.

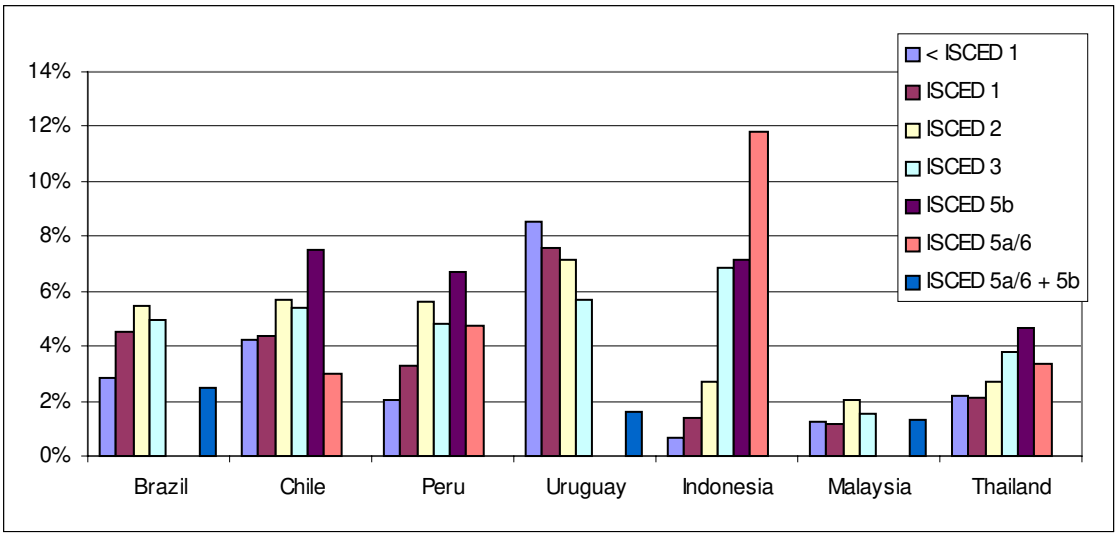
This does not necessarily mean that the informal sector is generally less efficient or dynamic – to the contrary. It does imply, however, that there are serious problems with respect to the formal labour market. It thus appears that even in Thailand – despite its low rates of both un- and underemployment – the overall labour market situation may be less bright than one might have expected at first glance.

Finally, it should be noted that informal sector employment often coincides with underemployment. Since the quantitative relevance of the overlap is not specified in the data, no conclusion can be drawn as to the overall rate of persons hit by at least one form of labour market problems. Nevertheless, the data clearly show the importance of both underemployment and informal sector employment. If these concepts are so important to assess the overall labour market situation in non-OECD countries, one should expect that they will be equally important to correctly assess the relationship between education and labour market outcomes.

3.2 The impact of education on the employment situation

In order to present the relationship between educational attainment and the employment situation, the relevant indicators discussed above have to be disaggregated by level of education. With respect to the unemployment rate, this disaggregation is depicted in Figure 4. For each country, the column to the left shows the unemployment rate of persons with the lowest level of educational attainment (below completed primary) while the column to the right indicates the unemployment rate of persons with tertiary education. Wherever this was possible, a distinction was made between the more theoretically (ISCED 5a/6) and the more occupationally/technically oriented tertiary programmes (ISCED 5b). Where the data did not allow for this distinction, the corresponding columns are left empty and a column even further to the right indicates the overall unemployment rate for persons with tertiary attainment.

Figure 4: Unemployment rates by level of education, 1998



Source: UNESCO/OECD (2001a).

Looking at Figure 4, the most obvious impression is the lack of any clear relationship between educational attainment and unemployment. With the exception of Uruguay, in none of the seven countries, a rising educational attainment level generally reduces the rate of unemployment. Thus only Uruguay, the country with the highest GDP per capita in the reference year, presents the typical relationship observed in OECD member countries. In Indonesia, the poorest country presented here, the situation seems to be reverse. For all other countries, the relationship can be best described by an inverted U-shape, at least when the particularly high unemployment rates for ISCED 5b

qualifications are not taken into account. Apart from ISCED 5b, the highest unemployment rates are observed for persons with lower secondary attainment (in Brazil, Chile, Peru and Malaysia) and upper secondary attainment (in Thailand). Secondary attainment thus corresponds to the peak of the inverted U. This reproduces the findings of several earlier studies (see e.g. Mehar 1995; Tilak 1991, p. 369 and Wilczynski 1989, pp. 122f.).

While the differences between OECD and economically less advanced countries are obvious, the reasons why this is the case have been a matter of considerable debate. The relatively high unemployment of skilled as compared to unskilled persons in developing countries is often associated with labour market regulations leading to attractive (formal sector) wage levels which in turn provoke the excess supply of skilled labour. In other cases, the oversupply seems to be provoked by government policies promoting secondary and tertiary education irrespective of stagnating demand on the labour markets (Wilczynski 1989, p. 126). In Indonesia, where the unemployment rate is clearly the highest for the most highly educated segment of the population, oversupply of tertiary education seems to have been particularly strong (Hanisch 2001, p. 16). In other countries, crowding out effects were reported with respect to occupations typically requiring secondary attainment. Despite their over-qualification, persons with tertiary education took up these positions thereby transferring the unemployment problem from the highly skilled to the skilled and semi-skilled labour force (Carlson 2001, p. 18; Tilak 1991, p. 369; Wilczynski 1989, p. 126).[4]

At the same time, low unemployment rates in the least educated segment of the population are often explained by the strong correlation of low education and poverty which might distort the "real" impact of education on labour market prospects. For 16 Latin American countries, Duryéa and Székely (1998, p. 14) report that, on average, a 21-year old among the poorest 30% of the income distribution attends school for five years less than a person of the same age in the richest decile. Low rates of unemployment among unskilled groups of the labour force are then simply explained by poverty, whereby poverty is expected to force people into any type of employment - even if it does not match personal interests and skills, if it is underpaid, unstable and / or available only for a few hours a month. In the absence of general social security systems, only the better off segments of the population can actually afford

4 This argument is relevant for OECD countries as well. For a theoretical underpinning, see Saint-Paul (1994).

unemployment (Durth, Körner and Michaelowa 2002, p. 50). Under the assumption that most of the skilled unemployed would actually find at least some employment if they were ready to accept lower wages and less prestigious jobs than desired, skilled unemployment in developing countries has often been referred to as voluntary unemployment, search unemployment or even "luxury unemployment" (see e.g. World Bank 1989; Udall and Sinclair 1982).

This view has been seriously challenged by other studies, in particular during the 1990s. In many countries, skilled unemployment rates have simply become too high to be realistically considered as voluntary or search unemployment. With rising unemployment, expectations go down and even university graduates will be ready to accept informal sector small scale blue collar businesses at some point. However, despite the flexibility of the informal labour market, employment for some parts of the labour force will simply not be available. Even self employment is not always a realistic option. University graduates lacking the relevant personal relations to "insiders" in the informal market may find themselves in a particularly difficult situation (Turnham and Eröcal 1990, pp. 28 and 30f.).

Mazumdar (1994, p. 512) attempts to disentangle the effects of poverty and low educational attainment through multivariate regression analysis. For the case of Malaysia, he reports that unemployment rises with increasing education, but falls with increasing income levels. Other studies equally tend to find a positive correlation between poverty and unemployment (Rodgers 1989; Inter-American Development Bank 1987) although the direction of causality is not always clear. This seems to contradict the argument that in developing countries, the low skilled cannot afford to be unemployed while the more highly skilled can. In fact, it suggests that the relationship between educational attainment and unemployment which differs from OECD countries is related to the excess supply argument outlined above, rather than to the distortion of the effect of education through the correlation with poverty.

Turnham and Eröcal (1990, p. 26f.) further suggest, that the relationship observed between education and unemployment may be simply related to the fact that the youngest generation in the labour force happens to be both, relatively well educated and – due to their lack of experience and connections - more difficult to integrate into the labour market.

Finally, Carlson (2001, pp. 21f.) suspects that low skilled unemployment could actually be greatly underestimated due to difficulties in measuring the concept of "seeking work". Many persons belonging to the low skilled segment of the population may be discouraged workers who have given up to look for jobs. Duryea, Jaramillo and Pagés (2001, p. 7) also note that there may be a downward bias of unemployment due to the lack of incentives for registration if no unemployment insurance is available. This problem may be particularly strong at the low skill level since insurance systems, where they exist, tend to cover merely the white collar formal sector jobs (see e.g. Mazza 2000, pp. 30 and 35 for Brazil).

The above partly complementary, partly contradicting arguments can in fact be regrouped into four categories:

- arguments related to excess supply of skilled labour either at secondary or at tertiary level or both,
- arguments related to a distortion due to the correlation between educational achievement and income,
- arguments related to a distortion due to overlying effects related to specific age groups, and
- arguments related to data problems.

Some of these arguments can be directly checked against the more recent evidence provided by the WEI data set. Data on underemployment and informal sector employment by level of education will give some idea about the relevance of the argument that the low skilled poor find at least some work in these segments of the labour market. Disaggregating by age group will further allow to gain some insight with respect to potential distortions related to generational effects.

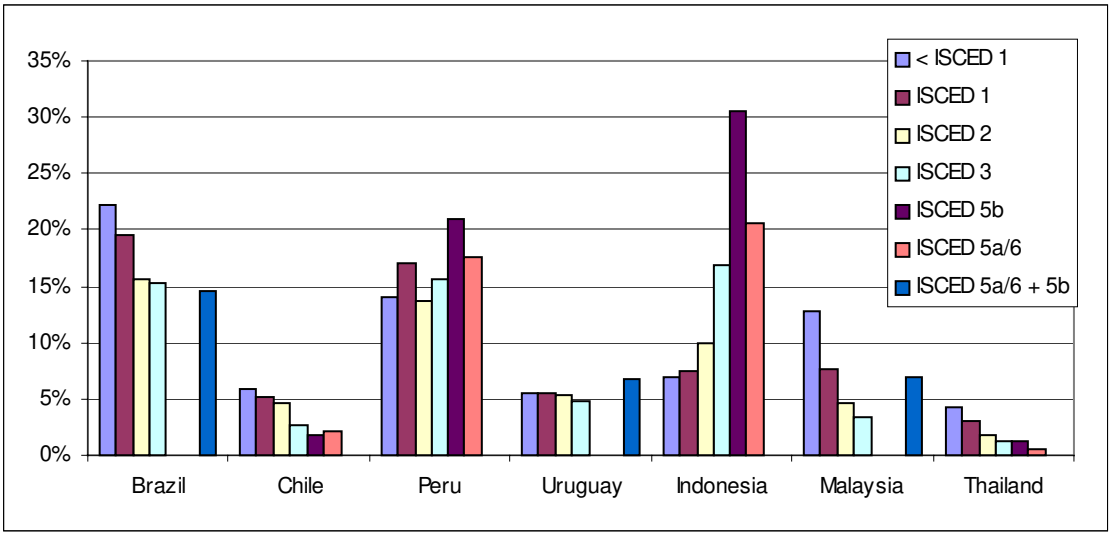
Data problems due to an incomplete registration of the unemployed do not seem to be a real problem in this data set since data were collected through census and household surveys and not provided by registration offices. It remains relevant, however, to consider the possibility of an underestimation of unemployment due to a high percentage of discouraged workers. This can be taken into account by comparing labour market indicators based on the labour force with labour market indicators based on the population as a whole. Finally, arguments related to access supply of skilled labour can

be checked against the earnings associated with different levels of educational attainment.

The remainder of this section begins the assessment of the various arguments by completing the evidence on unemployment by the evidence on underemployment. If the low unemployment rates of the low skilled population can be explained by the fact that they are forced to take up any kind of work, even if it is just for a few hours a month, there should be a particularly high share of low skilled workers among the underemployed. In fact, their high share among the underemployed should outbalance their relatively low share among the unemployed so that overall, the relationship between education and combined un- and underemployment should come closer to the relationship between education and unemployment observed in OECD countries.

Figure 5 shows that indeed, in four out of six countries where low unskilled unemployment was observed, unskilled underemployment shows the expected high levels. Education generally seems to reduce the risk to be underemployed in all four countries, Brazil, Chile, Malaysia and Thailand, with the only exception being the relatively high level of tertiary underemployment in Malaysia.

Figure 5: Underemployment rates by level of education, 1998

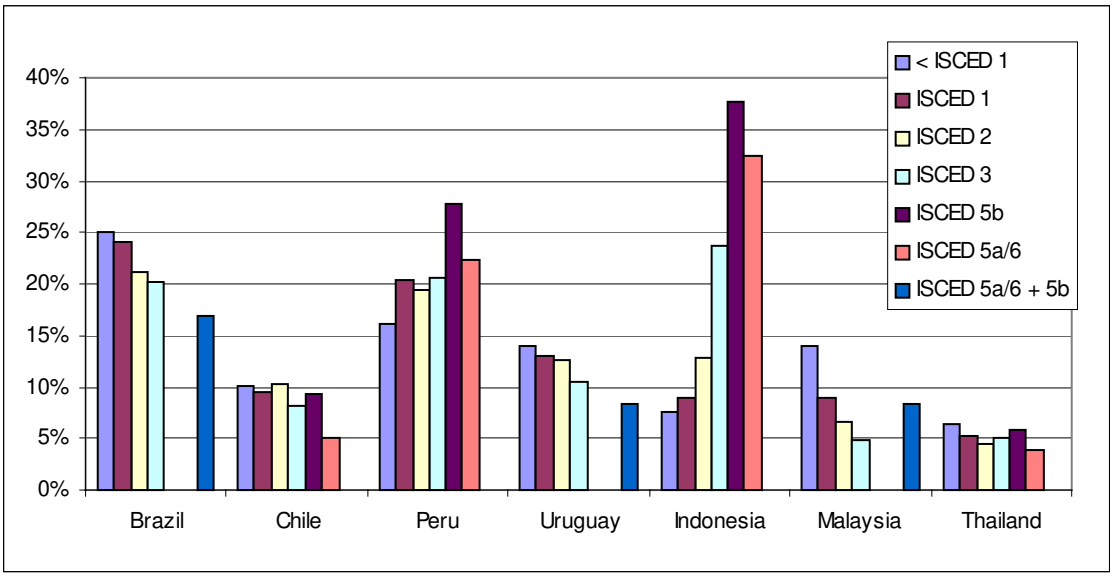


Source: UNESCO/OECD (2001a).

Adding up un- and underemployment, the structural relationship observed with respect to underemployment dominates. While the typical OEDC situation of shrinking

unemployment with rising education did hold for Uruguay only, broadening the indicator by considering both un- and underemployment leads to five out of seven countries broadly consistent with the OECD scenario. This suggests that in the majority of the countries presented here, education tends to be beneficial for employment prospects. Apparently, in industrialized and most developing countries alike, unskilled persons face the most serious problems of adequate integration into the labour market.

Figure 6: Combined un- and underemployment rates by level of education, 1998



Source: UNESCO/OECD (2001a).

Among the countries analysed here, the most obvious exceptions to this rule are Indonesia and Peru where un- and underemployment on the one hand and education on the other hand appear to be positively and not negatively correlated. In Peru, considerable low skill underemployment leads to a rather flat slope. Nevertheless, it becomes obvious that in both cases, the inverse relationship between unemployment and education cannot be adequately explained by the need of the unskilled poor to take up any kind of employment available. At the same time and even more clearly, combined un- and underemployment rates beyond 20% and beyond 30% for Peruvian and Indonesian tertiary graduates respectively, are inconsistent with arguments related to voluntary unemployment.

Excess supply of skilled labour could provide a more realistic explanation of the situation in both cases. Indonesia and Peru were the countries with the lowest GDP per capita in 1998. Possibly, economic development, technological change and the

associated employment opportunities for skilled labour were not able to follow the rapid increase in human capital creation throughout the 1990s. For the Indonesian case, Hanisch (2001, pp. 16f.) suggests that, in particular, the strong increase in graduates from the law, social and cultural faculties could not be absorbed by the labour market. In many cases, these graduates are reported to have founded NGOs and entered into self-employment. This may contribute to the explanation of the high rates of underemployment for persons with tertiary education attainment observed in Indonesia. The Asian crisis is expected to have further aggravated the labour market prospects of university graduates (Hanisch 2001, p. 17).

In Malaysia, although overall, education seems to exert a positive influence on employment opportunities, this does not seem to be the case for tertiary education graduates either. The argument of excess supply of highly skilled labour may therefore be relevant here as well. This would be consistent with the Mazumdar's (1994, pp. 511 and 515) observations already for the late 1980s.

Another irregularity should be noted with respect to several country-cases in Figure 6. In all countries for which separate information on the more practical / technical / occupationally oriented tertiary education (ISCED 5b) is available, the corresponding un- and underemployment rates disturb the general trend relating education and employment prospects. In fact, in all cases, labour market prospects of this group of graduates seem to be particularly bad. This is surprising since a more vocational or technical orientation of studies is often recommended (see e.g. Carlson 2001, pp. 15-17; Sussangkarn 1994, p. 606). Indeed, the occupationally oriented ISCED 5b programmes should be expected to be geared towards a particularly smooth entry into the labour market.

Why this is not the case, is difficult to say. There appears to be some problem with the concrete implementation of current programmes listed in this category. Sussangkarn (1994, p. 607) notes for Thailand, that technical programmes often lack the relevant facilities (e.g. machinery and computers) adapted to modern technologies. Carlson (2001, p. 22) reports that in Latin America, many students enrolled in ISCED 5b programmes actually intend to use these programmes only as a "stepping stone or parking space" until they are admitted to traditional ISCED 5a university programmes that offer higher wage premiums. This underlines the relatively bad reputation of ISCED 5b programmes in the way they are implemented today.

At the same time, it is not clear whether ISCED 5b has always been correctly specified by the reporting countries. According to the data, the share of students enrolled in these programmes is very small. It is not clear whether all relevant programmes have been taken into account. Moreover, since in none of the countries ISCED 4 programmes are listed separately, there is a high probability that post secondary, non tertiary programmes will at least partly be included in this category. Box 4 reports the detailed information Chile, Indonesia, Peru and Thailand, the four countries with separate data for ISCED 5b, provided about the national programmes covered by this level of education. Whatever the specification problems may have been, these programmes apparently require a specific check with respect to their ability to create human capital relevant to the labour market.

Box 4: Specifications of national ISCED 5b programmes

Country:	*Programme:*	*Theoretical duration:*	*Description:*
Chile	Carreras Técnicas en Centros de Formación Técnica	3 years full time	These programs are generally practical. They are focus on occupationally-specific skills geared for direct entry into the labour market.
	Carreras Técnicas en Universidades	3 years full time	These programs are generally practical. They are focus on occupationally-specific skills geared for direct entry into the labour market.
Peru	Superior no Universitaria Incompleta	5 (or 3)	Occupational specific (technical and pedagogical).
Indonesia	Diploma I programmes	1	Diploma DI
	Diploma II programmes	2	Diploma DII
	Diploma III programmes	3	Diploma DIII, entitles graduates to teach one subject at lower secondary level.
Thailand	Diploma programmes	2	Vocational Education Certificate

Note: For Brazil, Malaysia and Uruguay, no separate information for ISCED 5b is available.
Sources: UNESCO/OECD (2000b and 2001b**,** Annex A5b)

Summarising the results of this section, it can be concluded that the analysis of underemployment by level of education provides strong support to the argument that low unemployment rates of the unskilled are related to their poverty and their need to take up any work available to them. Their share among the underemployed is therefore very high. Once this effect is taken into account, the education-employment relationship observed does not differ significantly any more from the one typically observed in OECD countries. Notable exceptions are Indonesia and Peru, where the reverse relationship persists with particularly high unemployment rates of the (highly) skilled.

In these countries and, to a lesser extent, in Malaysia, oversupply of skilled labour seems to be the relevant explanation of skilled unemployment. At least in some disciplines, labour market demand for persons with high attainment levels did not match the speed of human capital creation. Particularly striking examples are ISCED 5b programmes whose graduates appear to have extremely bad employment prospects in all countries for which separate data are available.

3.3 The impact of education on informal sector employment

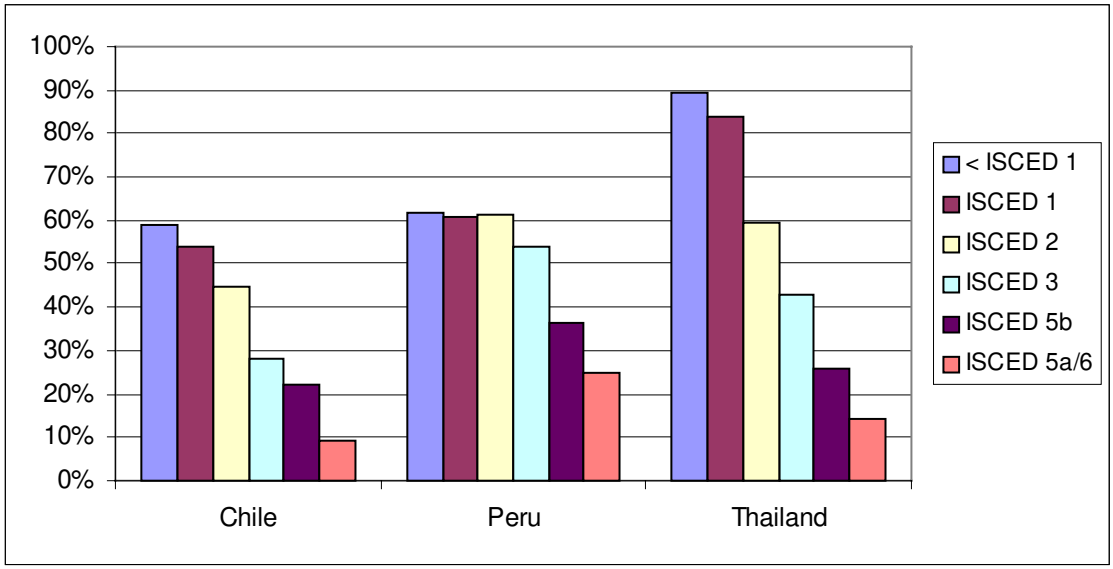
If the above conclusions are correct, this should be reflected as well in informal sector employment by level of education. In fact, it is the informal sector which is traditionally thought to be flexible enough to provide at least some employment opportunities for the unskilled poor desperately looking for work. In line with the observation of low unskilled unemployment, but high unskilled underemployment, and in line with the explanation of the poor being forced to seize any work opportunity available, it should therefore be expected that the share of the unskilled poor among the persons employed in the informal sector is particularly high. At the same time, at least as long as there is no serious excess supply of skilled labour, graduates of higher level educational programmes should be less strongly represented among the workers in the informal sector.

The implied negative relationship between the level of educational attainment and employment in the informal sector is often reported in the literature (e.g. Funkhouser 1996, p. 1742; Mazumdar 1994, pp. 500f.). The reasons given are generally related to the highly flexible informal sector employment relations already mentioned above. Griffin and Edwards (1993, p. 246), for instance, argue that in flexible employment relations, educational degrees are less relevant as a screening device. The formal sector with its long-term contracts and wage rigidities – especially in the civil service – (see e.g. Oladeji 1997, p. 356) requires educational degrees as a minimum guarantee of the abilities required. The unskilled are therefore constrained to accept informal sector employment, and even more so, as they are generally too poor to remain unemployed while waiting for better job opportunities in the formal sector.

For all countries providing information on informal sector employment by level of educational attainment, data are consistent with these arguments. Chile and Thailand show an unambiguous negative relationship between informal sector employment and

educational attainment levels. In Peru, for all population groups with attainment levels up to lower secondary education, informal sector employment rates are about the same. Only from upper secondary education onwards, informal sector employment decreases. Overall, the decrease is less strong than in the other two countries (see Figure 7).

Figure 7: Informal sector employment rates by level of education, 1998



Note: Original Peruvian data for ISCED 5b include an obvious reporting error for males aged 45-54 (over 250% of the labour force reported to be employed in the informal sector). This appears to be a wrong setting of the decimal point which was corrected here.

Source: UNESCO/OECD (2001a).

This evidence matches the evidence on underemployment presented in the previous section. To a large extent, underemployment and informal sector employment seem to go hand in hand. As opposed to Chile and Thailand, section 3.2 indicated that Peru suffers from considerable excess supply of skilled labour. Given the serious shortage of employment opportunities in the formal sector, not only unskilled, but also a considerable number of skilled and highly skilled persons search employment in the informal sector.

At the same time, it is obvious that informal sector employment is not only a question of how many people are unable to find employment in the formal sector and constrained to search work elsewhere. It is also a question of how strong the absorption capacity of the informal labour market really is. Turnham and Erökal (1990, pp. 27f. and 31) suggest that entry into the informal sector often requires personal relations with those already established there, and that persons with higher educational attainment often lack these

relevant contacts. Moreover, informal sector employment may be determined at least partly by personal comparative advantages, e.g. in the fields of entrepreneurship, specific technical knowledge or handicrafts (Yamada 1996, pp. 306 and 308). Most people choosing higher educational programmes can be expected to have their comparative advantages in other, often more general or theoretical fields. The question therefore arises, whether the informal sector is really flexible enough to integrate even this group of people if the formal labour market does not provide the desired employment opportunities. This absorption capacity of the informal sector certainly varies from country to country. Funkhouser (1996, p. 47) provides some evidence of national differences in institutional characteristics of the informal sector that may also be relevant here. Turnham and Erökal (1990, pp. 31f.) suggest that the Peruvian capital Lima provides a relatively more supportive environment for self employment in the informal sector than other major cities in developing countries.

Summarising this section, it can be concluded, that the evidence on informal sector employment presented here, is consistent with the results of the discussion of un- and underemployment. Overall, there is a clearly negative relationship between the level of educational attainment and informal sector employment. Yet, the capacity of the informal sector to integrate highly skilled persons varies across countries. It is relatively high for Peru with informal sector employment rates of 25% and 35% for persons with ISCED 5a and 5b attainment respectively. At the same time, it seems that in this country, excess supply of skilled labour in the formal sector pushes people into the informal sector.

3.4 The impact on employment reconsidered: Hidden effects of education related to labour market participation

So far, employment data have been presented in relation to the labour force, a procedure that corresponds to the standard presentation of labour market statistics. However, it is sometimes argued that the corresponding indicators may hide labour market problems due to discouraged workers, i.e. due to people who do not seek work simply because they know that they won't find any, and who are therefore not included in the labour force. In fact, Carlson (2001, pp. 21f.) suggests that, in developing countries, a particularly high rate of discouraged workers among persons with low educational attainment could provide an alternative explanation for the observed relatively low unemployment rate of the unskilled poor. This argument reflects an extremely pessimistic view of the absorption capacity of the labour market (including the informal sector), since it implies that many people will not even find *some* employment, whatever little and whatever badly remunerated. This view is shared by other authors (see e.g. Turnham and Eröcal 1990, pp. 30ff.).

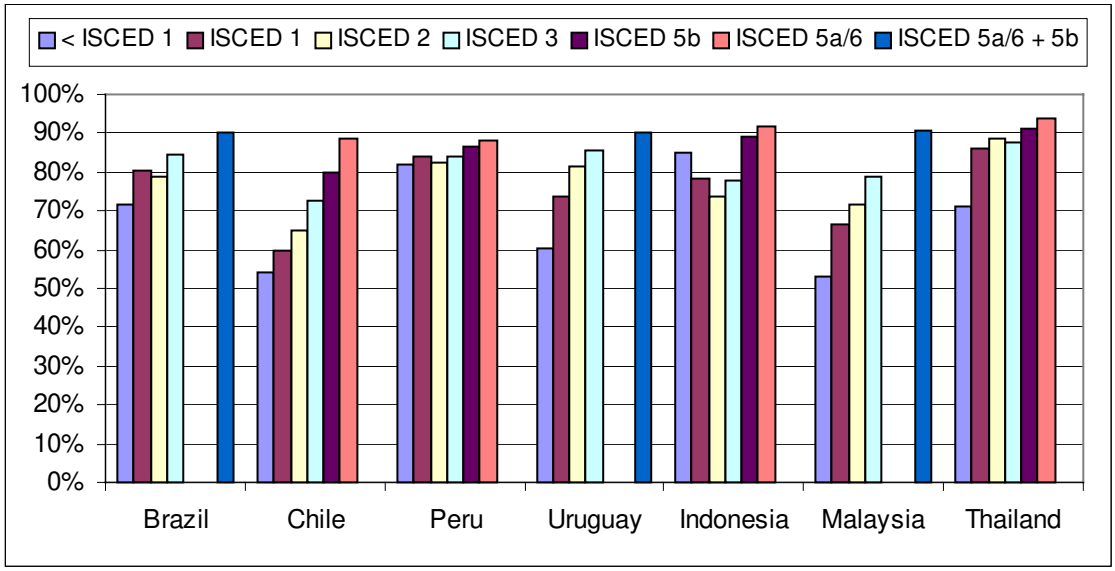
Looking at labour force participation rates in Figure 8, it becomes clear that there is indeed a positive relationship between labour force participation and educational attainment, i.e. the unskilled tend to remain outside of the active population much more often than the skilled do. And if all people without work (i.e. inactive, supposedly discouraged, and unemployed) are related to the total population - thereby creating a revised "unemployment rate" - the untypical features of the original unemployment rate in relation to educational attainment (reverse U-shape or upward slope) do indeed disappear for most countries, just as in the case where underemployment was taken into account. This relationship is presented in Figure 9.

However, there is one problem about this story: A strong positive relationship between labour force participation and educational attainment is typical for developed and developing countries alike. It does not seem very logical to explain differences with respect to unemployment, by similarities with respect to labour force participation. There may of course be differences between OECD and non-OECD countries with respect to the reasons why people do not belong to the active population. Indeed, discouragement may be more prevalent in less advanced countries, while in industrialised countries with well functioning social security systems and family allowances for child-caring, the free decision to remain inactive may dominate. However, these two effects cannot be disentangled on the basis of the available data.

One might also suggest, along the lines of earlier arguments, that many people in poor countries can actually not afford to be "discouraged". Turned differently: In countries with higher incomes, people will tend to give up search more easily.

While it remains unclear whether the effect is related to free choice or to more easy discouragement or both, Figure 8 shows, that, among the seven countries covered by this report, labour force participation of the unskilled is the lowest for those countries with the highest GDP per capita (Chile, Uruguay and Malaysia). These are the countries where the positive relationship between labour force participation and educational attainment is the most obvious.

Figure 8: Labour force participation rates by level of education, 1998



Note: The high labour force participation rates of low skilled persons in Indonesia is apparently overestimated due to errors in the data for some age segments of the male labour force (reported labour force rates > 100%).

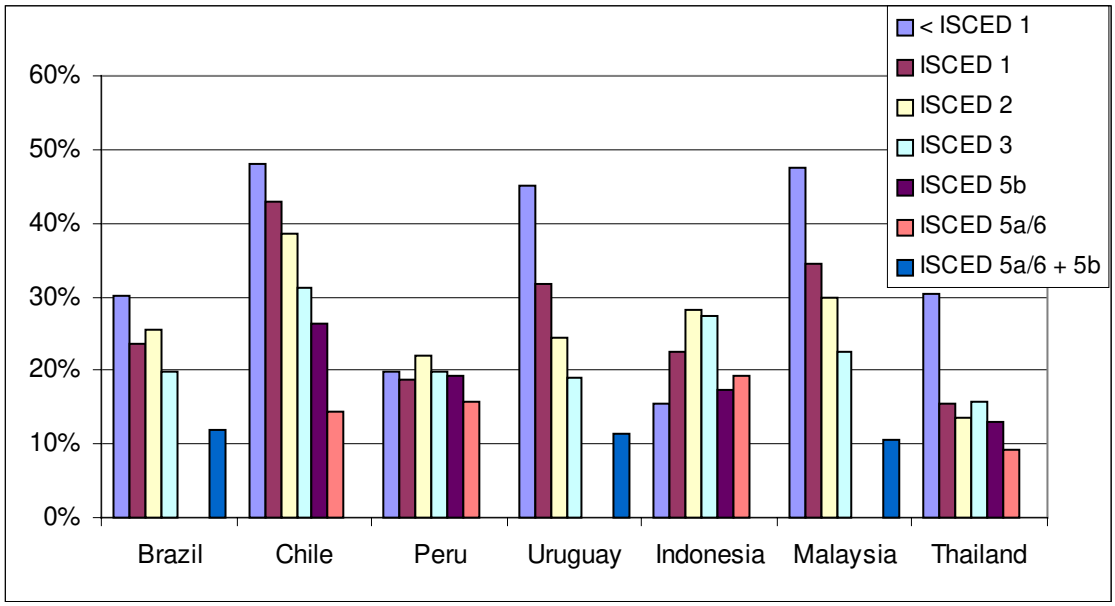
Source: UNESCO/OECD (2001a).

This particular situation for Chile Uruguay and Malaysia is reflected in Figure 9, since in all three countries, the share of unskilled persons (<ISCED 1) without work within the total population amounts to levels as high as 45-50%. Generally, the percentage of people without work is higher in these countries. This also shows, that the share of people without work is certainly not a sensible indicator of the labour market problems even in developing countries, and that it should certainly not replace the unemployment rate, despite the problem of discouraged workers. The same is true if persons with insufficient work are added to those without work. This cannot replace the combined

un- and underemployment rate. For the sake of completeness, persons with none or insufficient work as a share of total population are presented in Figure 10.

Comparing Figures 9 and 10 shows that, except Indonesia, the relationship with educational attainment remains stable for each individual country. However, due to the higher level of underemployment in the poorer countries, the average percentage of people without sufficient work in the poorer countries comes close to the average level in the richer countries.

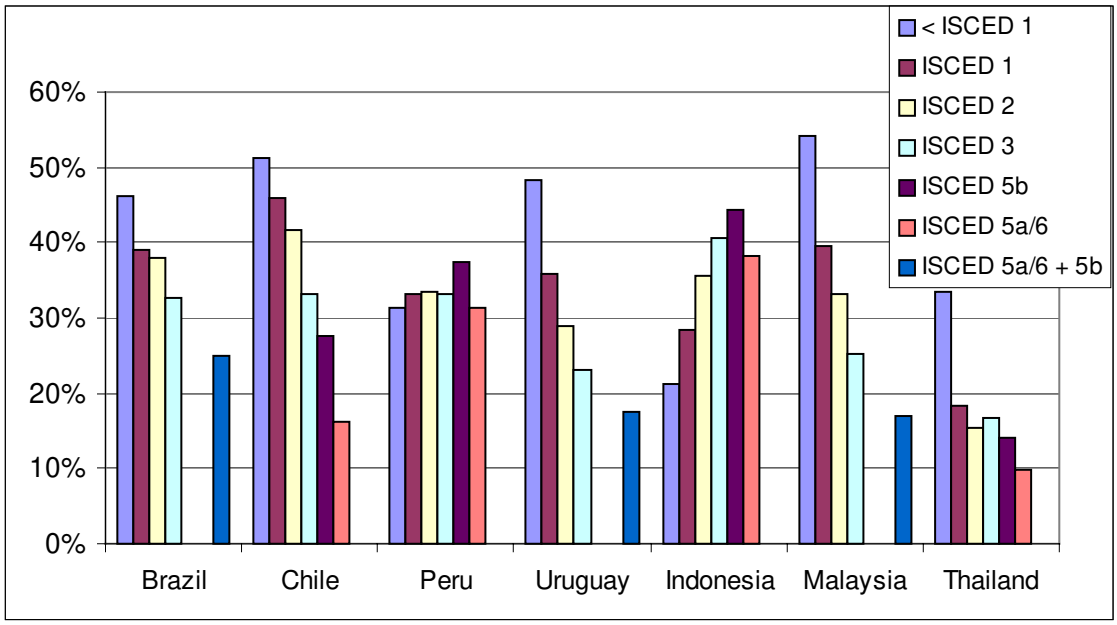
Figure 9: Persons without work as a share of total population, by level of education, 1998



Note: Persons without work = total population - employed population.

Source: UNESCO/OECD (2001a).

Figure 10: Persons with no or insufficient work as a share of total population, by level of education, 1998



Note: Persons with no or insufficient work = total population - (employed - underemployed population).
Source: UNESCO/OECD (2001a).

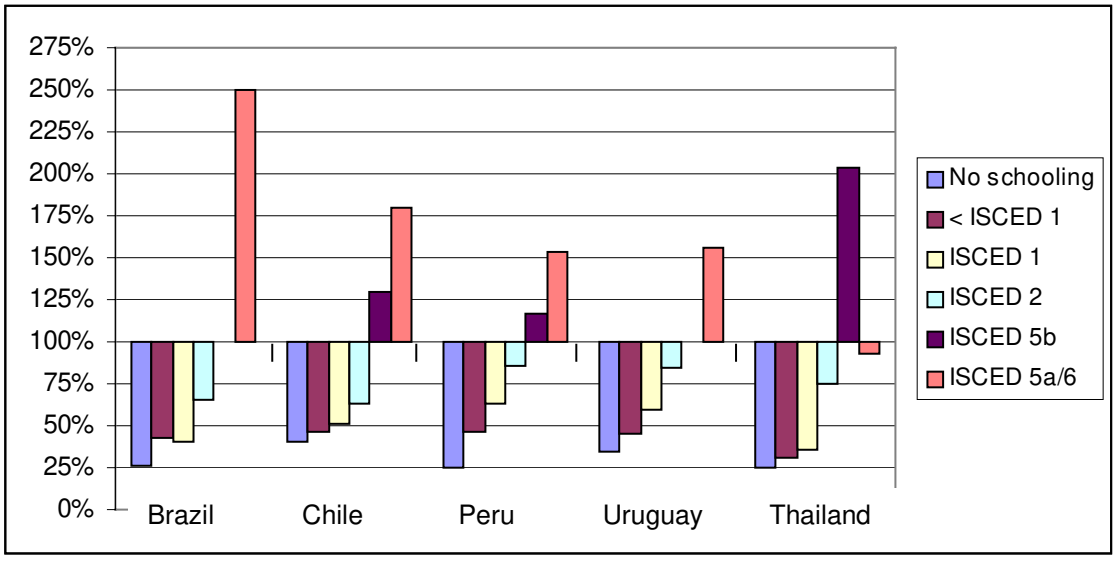
All in all, this section indicated that labour force participation is positively linked to educational attainment in less developed countries and OECD countries alike. The reasons may differ reflecting different parts of discouraged workers and persons simply preferring to stay inactive. Since these reasons cannot be disentangled, indicators relating persons without or without sufficient work to total population, do not make sense as "revised" indicators of the employment problems in less developed countries. In fact, the indicator of combined un- and underemployment still appears to provide the most realistic picture of their labour market situation. Considering labour force participation does not lead to a revision of the arguments presented in the previous sections. It does, however, provide an interesting insight into the propensity to work at different levels of educational attainment.

4 The impact of education on earnings

Having looked at the impact of educational attainment on employment, it remains to examine whether the positive effect of education also holds with respect to incomes. For OECD countries, again, there is a clearly positive link. The earnings differential is particularly high between upper secondary and tertiary education while it tends to be less pronounced between lower attainment levels (OECD 2001, p. 299).

Figure 11 shows that the data indicate exactly the same relationship for the countries examined in this report. Data are available for Brazil, Chile, Peru, Uruguay and Thailand. Indicators of mean incomes from work (for simplicity referred to as "earnings" in the following) are not presented in absolute terms but only relative to earnings of persons with upper secondary attainment (ISCED 3). Even for OECD countries, this technique is used to avoid problems of cross-national incompatibility of earnings definitions (OECD 2001, pp. 299 and 302).

Figure 11: Mean incomes from employment by level of education (relative to mean incomes for persons with ISCED 3), 1998



Note: Given that the figures are ratios of weighted averages of earnings across different age groups, they can differ significantly from what one would expect looking at each age cohort individually (see Figure 19). At ISCED 5a/6 in Brazil, for instance, no individual age cohort shows relative earnings as high as the overall 250%. This is possible due to the different weights of age groups at ISCED 3 and 5a/6.

Source: UNESCO/OECD (2001a).

The earnings differential is particularly strong for Brazil, stronger than in any other country presented here, and stronger than in any of the OECD countries presented in

OECD (2001) (see also Carlson 2001, p. 24). Both in OECD countries and the countries discussed in this report, the theoretically oriented tertiary education (ISCED 5a/6) generally leads to the highest earnings differential. In Thailand, however, the more professionally oriented practical / technical tertiary education programmes ISCED 5b lead to considerably higher earnings. Earnings are high despite the rather mediocre employment prospects of graduates from these programmes. The opposite is true in Chile and Peru where ISCED 5b appears to be much less rewarding than ISCED 5a. As opposed to the case of Thailand, in these two countries, earnings seem to have adjusted to the relatively bad employment prospects of ISCED 5b graduates on the labour market (see Figure 6, section 3.2). In Brazil and Chile, a strong increase in earnings can also be observed from ISCED 2 to ISCED 3.

Before concluding this section, it should be noted that the concept of relative earnings used here is different from the concept of *rates of return* to education. As opposed to relative earnings, rates of return to education take into account the opportunity costs that arise from additional education. Due to high foregone earnings, these opportunity costs are particularly important for higher levels of education. This is why the highest rates of return are generally observed for the lowest level of education (e.g. Psacharopoulos 1993, p. 1332). From an investor's point of view, despite the particularly high earnings differences observed between ISCED 3 and 5a/6, investment in lower levels of education may still be more rewarding.

The OECD indicator of relative earnings used here also differs from the concept of pure *wage differentials* since it reflects variations in wage rates *and* coverage, i.e. in the time spend in employment which is itself correlated to the level of education. Therefore, the differences observed here are greater than those which could be observed by a comparison of wage rates alone (OECD 2001, p. 302).

All in all, it should be retained from this section that the link between education and earnings just as the link between education and employment is substantially the same for OECD and non-OECD countries. In both cases, the level of educational attainment is positively correlated with labour market prospects. While with respect to employment, this effect became obvious only after giving due consideration to the problem of underemployment, the positive relation between education and earnings is straightforward and holds - almost without exception - for all countries and levels of education.

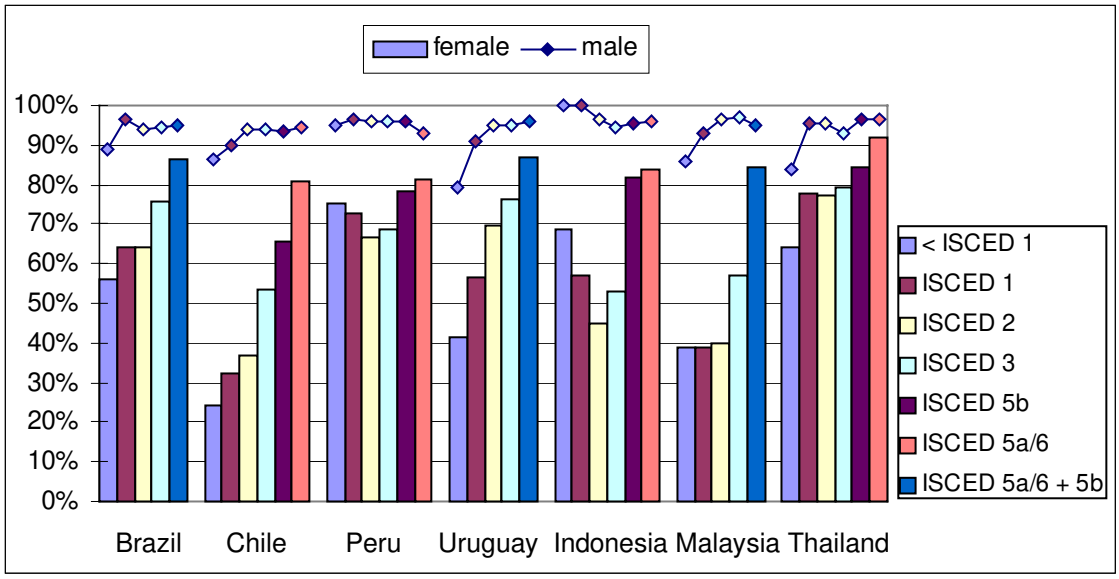
5 Gender effects

So far, labour market prospects by level of education have been discussed without any distinction between women and men. From industrialised countries, however, it is well known that, at a given level of educational attainment, labour market prospects of women are generally lower than those of men. Women tend to be less often part of the active population, and if they are, they are more often found in low-pay and unstable positions (OECD 2001, pp. 267ff., 299ff.).

Looking at labour market participation first, Figure 12 shows the expected gender differences, just as in the typical OECD case. Comparing labour market participation rates of men (line on top) with those of women (columns), it becomes clear that the share of economically active men is much higher, in particular for low levels of educational attainment. The widening gap with lower levels of education is related to the fact that for women, generally, the positive relationship between educational attainment and labour force participation is much stronger than for men. This is a common result already reported in other studies (see e.g. Duryea and Székely 1998, p. 22). The most extreme cases are Chile, Uruguay and Malaysia where, for persons without completed primary education, male labour force participation rates are about twice as high as female rates. At the same time, among tertiary education graduates, labour force participation rates of men exceed those of women by only about 10%. Gender differences with respect to the strength of the correlation between educational attainment and economic activity are equally observed in OECD countries (OECD 2001, p. 273).

It can be observed that, except for Thailand where labour market participation rates of women are generally high, the increase in female economic activity is particularly strong from ISCED 3 onwards (see also Cameron, Dowling and Worswick 1997, p. 21). In fact, in two countries, Peru and Indonesia, exceptions to the general trend discussed above, female labour force participation rates actually decrease until ISCED 2 and increase only from there onwards.

Figure 12: Labour force participation rates by gender and level of education, 1998



Note: Labour force participation rates of low skilled men in Indonesia are reported to lie above 100%. For consistency reasons, these figures were reduced to 100% here.

Source: UNESCO/OECD (2001a).

It is interesting to note that again, the two poorest countries represent the two exceptions, with a U-shaped relationship rather than a monotonous increase of female labour force participation along with educational attainment. This may give further support to the argument that in poor countries without general social security systems, many uneducated persons can simply not afford to stay out of the labour force, even though the incomes they can expect are meagre, and even though, in the particular case of women, they will have to carry out many other additional activities (household and child caring). The U-shaped relationship has frequently been found for other developing countries as well (Cameron, Dowling and Worswick 2001, p. 460). Even within OECD countries, it has been observed for Korea (OECD 2001, p. 267).

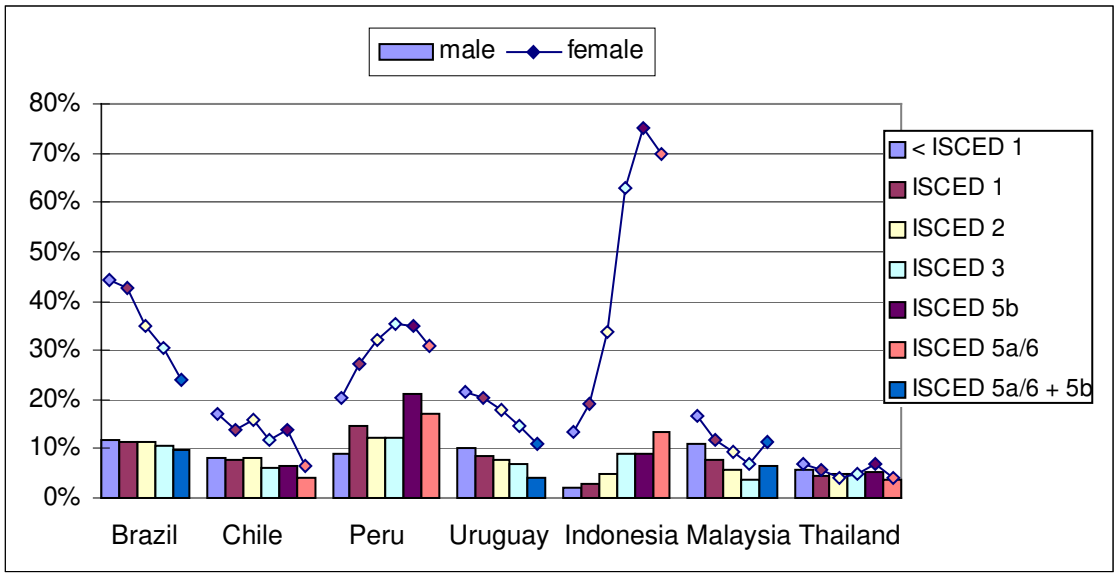
The relationship shows how the additional benefit of increased earnings is weighed against the disutility of additional work in the different countries. Expected returns to employment increase while the utility of additional earnings decreases with rising education (assuming a positive correlation between education and wealth). The disutility of additional work may also decrease with rising education since the type of work tends to change from hard physical work to desk work and intellectual work. Moreover, educated women in wealthier households can more easily reduce additional tasks related to housework and child caring so that employment on the labour market

can substitute for rather than cumulate with other work. On the national level, the predominance of either of these effects at a given level of educational attainment is not only a matter of national wealth, but also of traditional gender roles as well as of the inner family relationship between male and female education and income (see e.g. Cameron, Dowling and Worswick 1997, pp. 3, 14, 21 and 24ff.).

Women are not just underrepresented within the labour force. Once they are in the labour force, they face considerably greater problems of un- and underemployment. While relatively high female unemployment has already been mentioned as a characteristic feature of many OECD countries, gender discrepancies tend to be much smaller there than in the economically less advanced countries considered here. In fact, in the OECD, female unemployment rates twice or thrice as high as male rates are rare exceptions across all countries and levels of educational attainment. They can be observed in Spain, and, for some ISCED levels, in Greece, Italy and Portugal. In about half of the OECD countries, gender differences are hardly perceivable (OECD 2001, p. 271).

Figure 13 shows that among the seven countries considered here, only Thailand has very similar un- and underemployment rates for men (columns) and women (line on top). In Chile, Peru and Uruguay both un- and underemployment rates are about twice as high for women as the respective rates for men. In Brazil, they are twice to four times as high for high and low ISCED levels respectively. The most extreme case, however, is Indonesia. In this country, combined un- and underemployment is about six times as high for women as for men. This is mainly due to extremely high female underemployment and may be at least partly related to the particular situation of the Asian crisis. Hanisch (2001, p. 12) reports that in 1998, at the peak of the Asian crisis, many Indonesian women decided to become economically active in order to help improve their family's income situation. High female un- and underemployment rates during this year would therefore be related to the increased female labour market participation rather than to women being hit more than proportionally by dismissals provoked by the crisis.

Figure 13: Combined un- and underemployment rates by gender and level of education, 1998

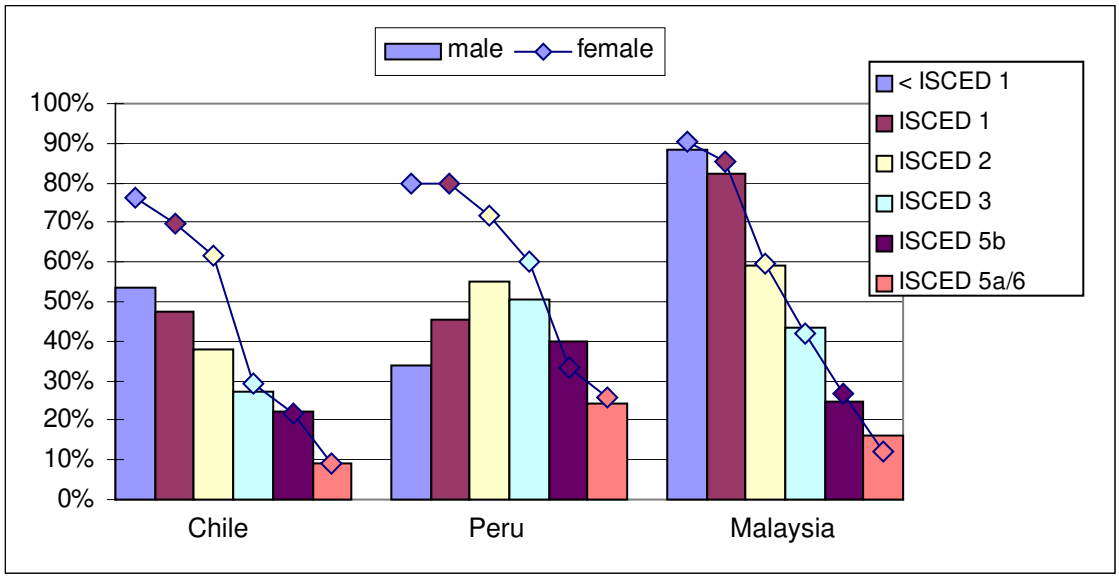


Source: UNESCO/OECD (2001a).

Figure 14 shows that, overall, the relatively difficult labour market situation of women is also reflected in higher informal sector employment rates. This is a common result for many developing countries (see e.g. Funkhouser 1996, p. 1776). Among the three countries for which data are available here, only Thailand again depicts no discernible gender differences. In Chile and Peru, at the lowest ISCED level, informal sector employment rates of women exceed those of men by about 50% and 100% respectively. In both countries, however, gender differences in informal sector employment diminish with increasing levels of education. With ISCED 5b attainment in Peru, the gender situation even gets reversed.

Considering the link between education and informal sector employment in general, Figure 14 shows that for women, the correlation is strictly negative in all three countries. Slight discrepancies from the general trend observed in Peru (Figure 7, section 3.3) are solely related to characteristics of the male labour force.

Figure 14: Informal sector employment rates by gender and level of education, 1998

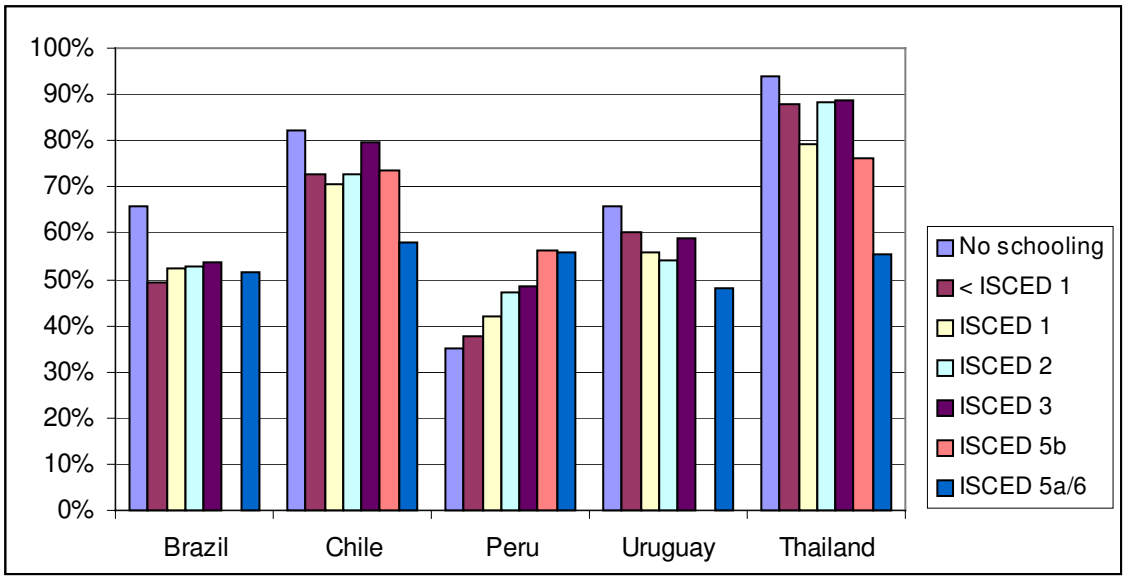


Note: See Figure 7.

Source: UNESCO/OECD (2001a).

Figure 15 finally shows gender differences with respect to earnings. In all five countries for which these data are available, women's mean incomes from employment are substantially lower than men's.

Figure 15: Female relative to male mean incomes from employment by level of education, 1998



Source: UNESCO/OECD (2001a).

It appears that on average, gender related earnings differentials are similar to those observed in the OECD. At given ISCED levels, women in Brazil, Peru and Uruguay earn only around 60% of their male colleagues. At the highest level of educational attainment, female earnings remain below 60% of male earnings in all countries. In all countries except Peru, the least divergence between male and female earnings can be observed for persons without schooling. Neglecting the additional effect of education on the employment situation, this would indicate that, at the exception of Peru, returns to education are higher for men than they are for women. Whether the relatively higher propensity of educated women to be employed can outweigh this effect, remains an open question. International evidence of gender differences in returns to education is mixed depending, for instance, on levels of educational attainment. However, selectivity correction for women outside the labour force does not seem to change the general trends (Psacharopoulos 1993, pp. 1327 and 1329).

To some extent, the earnings differential may be related to relatively high female underemployment and informal sector employment. Assuming that informal sector employment generally goes hand in hand with lower pay, one explanation for female relative earnings rising with educational attainment in Peru could be the remarkably strong education related relative decrease of female informal sector employment in this country. Voluntary part-time employment may also decrease women's mean earnings, at least in the better off, i.e. generally more highly educated segments of the population. Note that higher female unemployment and lower labour force participation rates do not interfere with the data presented here since mean incomes are calculated only with respect to those persons who effectively had at least some earnings during the reference period.

Reflecting upon the explanations of gender differences on the labour market, Behrman and Zhang (1995, pp. 35f.) argue that both earnings differentials and gender specific employment patterns are strongly related to gender differences with respect to traditional roles in the family, especially concerning child care and household work. They emphasise that the time a person is expected to spend in the labour force is highly influential for the employer's (and the employee's) decisions about investment in human capital. For example, in societies where most highly skilled women only work for a few years after their graduation, after which they get married and drop out of the labour force, employment prospects will be particularly bad. Moreover, since work experience is generally valued by higher wages, periods spent outside the labour force

also have a direct negative effect on earnings. Finally, many low skilled jobs in developing countries require physical strength which is a comparative advantage of men.

In OECD countries, the main determinants of gender differences on the labour market are similar. With respect to the earnings differential, OECD (2001, p. 302) mentions the different amount of time, men and women spend in the labour force, and the relatively high incidence of part-time work among women. Moreover, gender specific choices of career and occupation are emphasised. Another interesting explanation is related to the fact that, traditionally, within the family, men's professional choice is made prior to women's. This restricts the geographic area where women can search for work and matching of skills and job openings becomes more difficult. Women therefore often work in positions for which they are overqualified which, at a given level of educational attainment, leads to lower incomes from employment (Büchel and van Ham 2002). These are only some of a wider range of possible explanations.

All in all, comparing gender differences in OECD countries on the one hand, and in less advanced countries on the other hand, similarities are more obvious than differences. With respect to all indicators available for both country groups, obvious gender differences exist to the detriment of women. The size of the gender differential does not seem to be significantly different for OECD and non-OECD countries with respect to labour force participation and earnings, a fact that is partly due to the wide variation within the two country groups. Even the U-shaped relationship between education and labour force participation found in Peru and Indonesia is not merely a characteristic of developing countries since it has equally been observed in Korea. Besides poverty, other factors such as traditional gender relations must therefore be important determinants of this relationship. With respect to un- and underemployment, across all levels of education, the gender differential seems to be more important in the less advanced economies than in the OECD.

6 Age group effects

So far, the whole population from age 25 to 64 has been considered in both, figures and analysis. It is the purpose of this chapter to differentiate between different age groups and to add some insights on labour market outcomes of persons below the age of 25. In order to uniformly exclude students from the youngest age groups, for persons of 15-19 years, only ISCED levels 1 and <1 are considered here. Persons aged 20-24 are considered up to ISCED 3.

The differentiation by age should provide some insight about

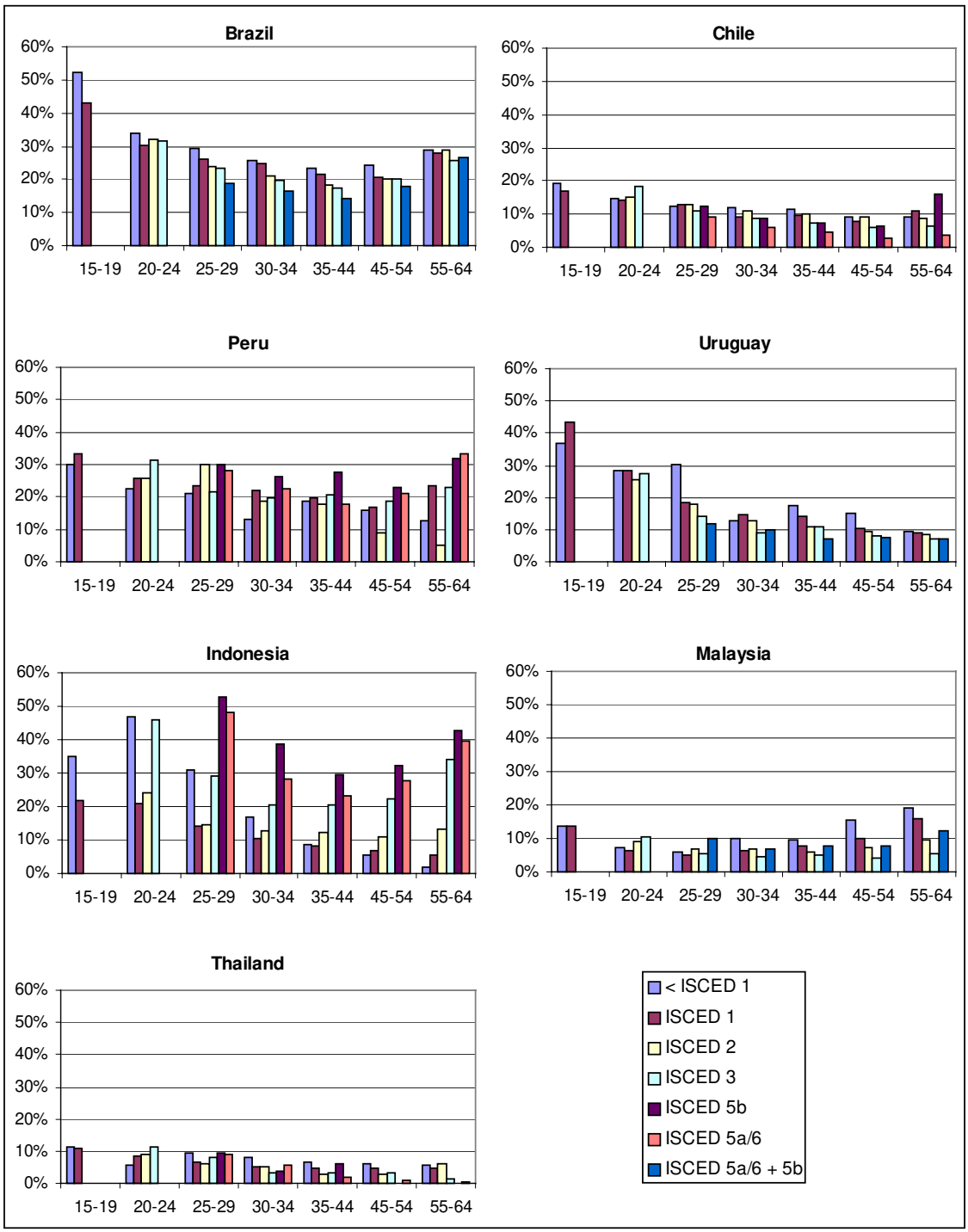
- potential difficulties concerning the labour market integration of younger segments of the labour force such as typically observed in OECD countries,
- the relevance of age cohort effects to explain the strong employment problems observed for persons with relatively high educational attainment in developing countries (Turnham and Eröcal (1990, p. 26f., see section 3.2), and
- developments in the relationship between education and labour market outcomes over time.

Figure 16 presents combined un- and underemployment rates by age group and level of education. Across different levels of education, employment problems seem to be particularly strong for the younger age groups (Chile, Uruguay, Thailand), for the oldest age group (Malaysia) or both (Brazil, Peru, Indonesia). Similar to the problems of youth unemployment observed in OECD countries, on average, here as well, the situation appears to be the most difficult for younger people. It is not clear whether the important employment problems of the younger age cohorts should be interpreted as a reflection of the transition problems from education to the labour market or rather as a deterioration of the labour market situation over time. The second interpretation would imply labour market saturation with older people leaving less entry chances for newcomers. The first would underscore the high value of already existing work experience for finding new employment. It is probable that there is some truth in both arguments, with weights depending on countries.

Given that youth un- and underemployment is particularly strong in many countries, Turnham and Eröcal's (1990, p. 26f.) argument of a bias in the correlation between educational attainment and employment may be true. It is based on the assumption that

educational attainment has continuously risen over time so that the high coincidence of high educational attainment and unemployment may actually be a spurious relationship.

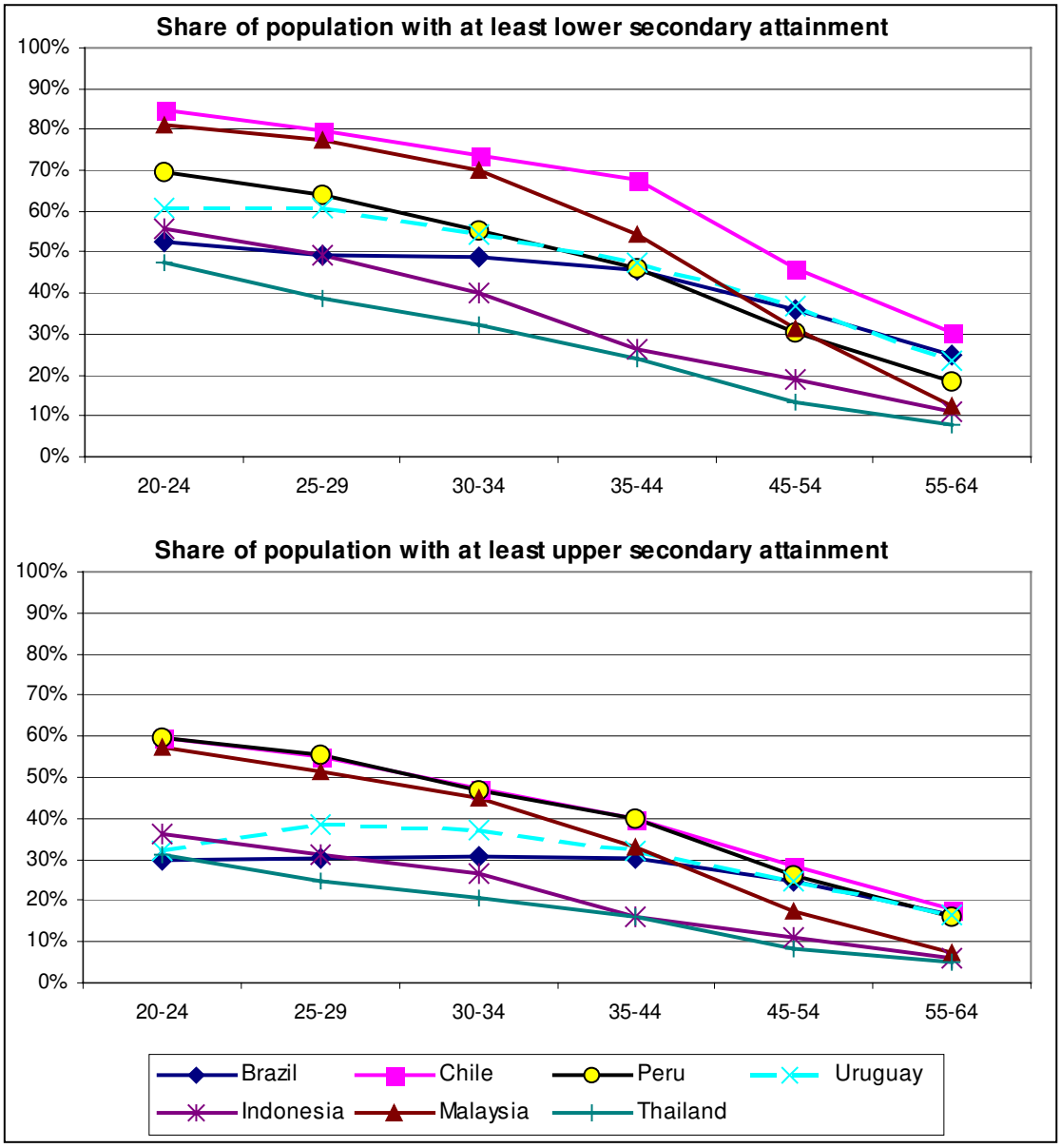
Figure 16: Combined un- and underemployment rates by age group and level of education, 1998



Source: UNESCO/OECD (2001a).

Figure 17 shows that in all countries considered here, educational attainment has indeed improved considerably over time. Across all countries, upper secondary attainment has risen from below 20% among the population aged 55-64 to between 31 (Brazil) and 60% (Chile) for the population aged 20-24. Similarly, 30% or less of the 55-64 year-olds reached a minimum of lower secondary attainment, while the respective shares among the 20-24 year-olds lie between 48% in Thailand and 81% in Malaysia.

Figure 17: Educational attainment by age, 1998



Source: UNESCO/OECD (2001a).

Looking at all age levels without distinction may thus indeed lead to a false interpretation of the relationship between employment prospects and education. At the same time, Figure 16 shows that, despite differences in the level of un- and underemployment between the different age groups, the structural relationship between educational attainment and employment prospects appears to be rather stable. In Peru and Indonesia, where the relatively bad employment prospects of the highly skilled observed on the basis of unemployment persisted when taking into account underemployment (see section 3.2), the same relationship prevails across different age groups. Therefore, the relatively bad employment prospects of the highly skilled in these countries are clearly not a matter of misinterpretation due to cohort effects but a matter of particularly serious labour market problems in this segment of the population. Again, the argument is confirmed that in Peru and Indonesia, supply of human capital rose faster than economic development and the absorption capacity of the labour market.

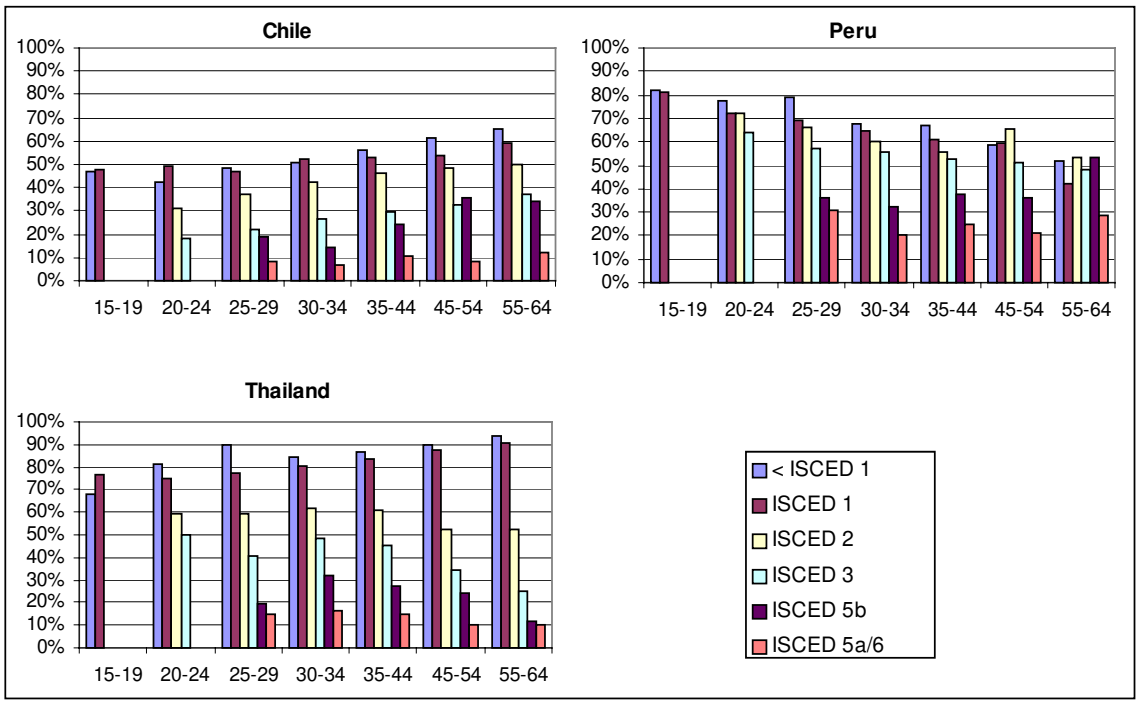
In other countries where a positive relationship between employment prospects and educational attainment had been observed, this relationship tends to hold for all age groups - most clearly in Brazil and Uruguay, and with a few outliers in the remaining countries.

With respect to informal sector employment as well, it can be checked to what extent a distinction between age groups might have influenced the pattern of its overall negative correlation with education. In fact, it is sometimes suggested that employment on the informal labour market is more relevant for older age groups since practical experience is particularly valued there (see e.g. Turnham and Eröcal 1990, p. 31). Indeed Figure 18 indicates that in Chile and Thailand, for each level of educational attainment, informal sector employment tends to increase with age. Thus given that younger people are generally more highly skilled, without disaggregation by age group, the effect of education on informal sector employment may actually have been overestimated.

However, just as in the case of un- and underemployment, the overall structural relationship observed across age groups remains stable when looking at the individual age cohorts. In all three countries for which data on informal sector employment are available, its relevance decreases significantly with increasing levels of educational attainment. Only the youngest age groups in Chile and Thailand, and the oldest age groups in Peru represent some exceptions. In Peru where the younger age groups are

more strongly represented on the informal labour market than the older age groups, differentiation between the age cohorts permits to discern the education-informal sector employment relationship even more clearly than before.

Figure 18: Informal sector employment rates by age group and level of education, 1998



Source: UNESCO/OECD (2001a).

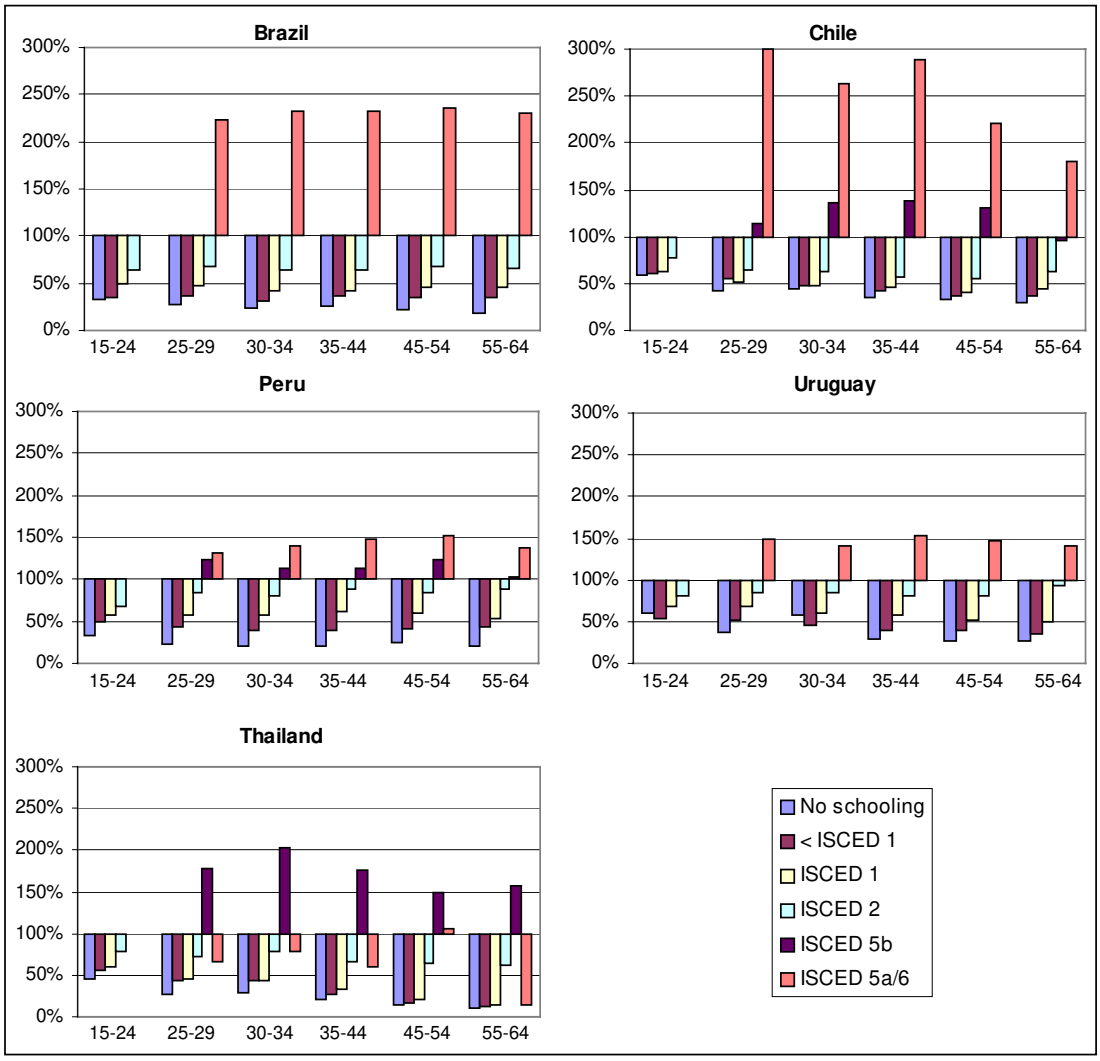
Besides looking at employment prospects, age disaggregation may also be interesting with respect to earnings. The relative earnings of highly skilled and low skilled workers as compared to persons with upper secondary attainment can be expected to give some insight about the changing valuation of human capital over time. Among the younger population where human capital supply is relatively high, returns to education might be lower. At the same time, the opposite could be true: Given that many people reach relatively high levels of education, those who do not could face particularly bad earnings prospects.

Figure 19 shows that in fact, for most countries, none of the two effects appears in the data. Only in Chile and Peru, for graduates of theoretically oriented tertiary education, a structural relationship between age cohorts and relative income levels can be observed. In Chile, this implies particularly high returns to education for young ISCED 5a/6

graduates. This could reflect a move of the economy towards knowledge intensive activities where recent graduates clearly have an advantage.

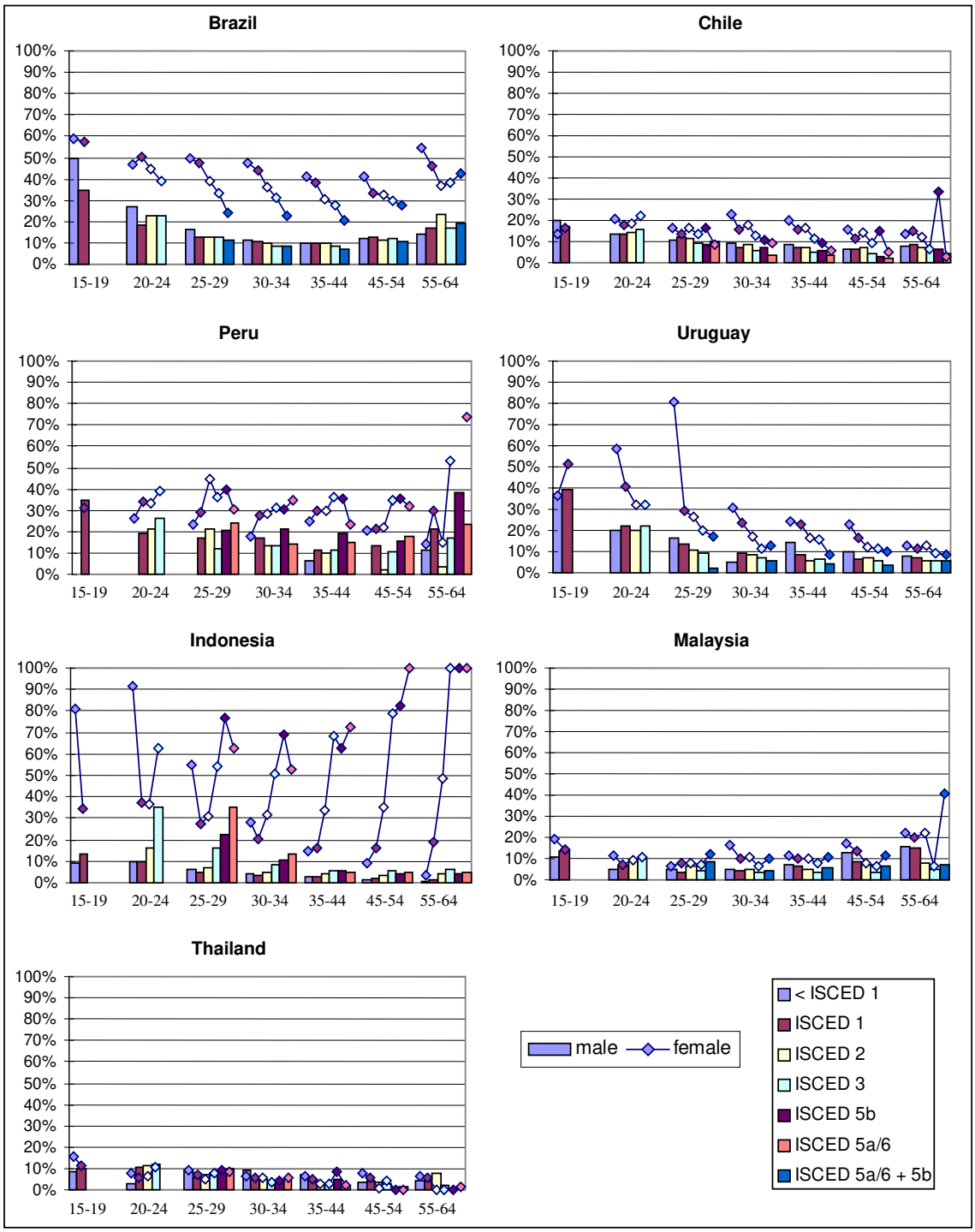
With the exception of the oldest age group and at generally much lower returns to education across all age cohorts, the opposite is true for Peru. Apparently, the increasing saturation of the labour market for university graduates in this country finds its reflection in lower incomes - either through lower wages or through higher rates of underemployment.

Figure 19: Mean incomes from employment by age group and level of education (relative to mean incomes for persons with ISCED 3), 1998



Source: UNESCO/OECD (2001a).

Figure 20: Combined un- and underemployment rates by age group, gender and level of education, 1998



Note: Indonesia reports combined un- and underemployment rates above 100% for skilled women above 45 years of age. For consistency reasons, these figures are reduced to 100% here.

Source: UNESCO/OECD (2001a).

Finally, the development of gender differences in labour market outcomes of education can also be examined over different age cohorts. Figure 20 depicts combined un- and underemployment rates for which the most significant gender differences had been observed in section 5.

It turns out that once again, no structural effect of age can be observed. Apart from a few outliers gender differences tend to remain about constant, both with respect to their overall relevance across levels of education and with respect to their correlation with educational attainment.

Summing up this section, it can be noted that given the high correlation between age and educational attainment, indicators of labour market outcomes of education that do not take this into account may be biased. However, for all countries presented here, this bias is not strong enough to change the observed structural relationships. In fact, for all variables presented, the structural relationship between educational attainment and labour market outcomes appears to be relatively stable across different age groups.

7 Conclusions

Labour market outcomes of education belong to the standard statistics available for industrialised countries. For these countries, the availability of these statistics allowed us to establish a number of stable correlations between educational attainment and various indicators of prospects on the labour market.

Due to the lack of consistent, relevant and comparable data, similarly clear relationships have not yet been established for non-OECD countries. In fact, in particular with respect to unemployment, statistical indicators for developing countries have sometimes been misinterpreted as showing that labour market problems are irrelevant for the unskilled poor, generally of relatively little relevance for developing countries, and, if at all, a problem of a relatively small minority of persons from high income groups considered to be the only ones actually able to afford being unemployed.

It is the advantage of the new UNESCO/OECD (2001a) data set presented in this report that it adds the relevant variables of underemployment and informal sector employment to the statistics available by level of educational attainment for non-OECD countries. Despite limited country coverage and some remaining inconsistencies in the data and definitions, these data clearly show that if information on labour market outcomes is adjusted by taking into account underemployment and informal sector employment, employment problems in less developed countries not only come out much more clearly, but also generally show the positive relationship between educational attainment and labour market outcomes typically observed in OECD countries. Only in exceptional cases (Indonesia and Peru) does excess supply of skilled labour appear to lead to relatively strong employment problems for persons with high levels of educational attainment.

For most other countries, it can be observed that it is the relatively much higher underemployment among persons with low levels of educational attainment which, despite a generally low unemployment rate, leads to their particularly high level of combined un- and underemployment and to the relatively lower levels for persons with higher educational attainment. This suggests that, in countries without broadly accessible social security systems, there is some truth in the argument that the unskilled, generally poor parts of the population cannot afford to be fully unemployed. At the

same time, this often implies that the little work they find is clearly insufficient. In fact, it may be limited to just a few hours per month.

Other explanations with respect to the low rates of low skill unemployment found in the literature are based on the potential bias of the bivariate correlation due to the lack of differentiation between different age groups. Younger persons without much previous experience on the labour market tend to have particularly bad employment prospects while, at the same time, being generally more highly educated than older persons.

It can be shown on the basis of the data available here that there is some truth in this argument. However, even though the initial effect may be overestimated, differentiation between age groups does not lead to a changed structural relationship between the level of educational attainment and employment prospects. In fact the same tendencies observed for the entire data set are found again for almost all individual age cohorts.

Apart from employment prospects, other indicators equally tend to reflect the typical links between education and labour market outcomes observed in the OECD. This is true for education related labour force participation rates and relative earnings, as well as with respect to the structural disadvantage of women and young people.

All in all, it can thus be concluded that once the relevant additional characteristics of labour markets in less developed countries are taken into account, the overall relationship between educational attainment and labour market outcomes is very similar to the one typically observed in industrialised countries.

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Statistical Appendix

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Sources

The unique source for data in all tables in the appendix is UNESCO/OECD (2001a).

General notes

All data refer to the year 1998.

They cover the age groups 25-64 if not otherwise specified. In order to avoid inconsistencies due to the unequal treatment of students, specific data for younger age groups are only presented up to ISCED 1 and ISCED 3 for 15-19- and 20-24-year olds respectively.

For Peru, ISCED 5a/6 only includes ISCED 5a. For ISCED 6, no information is available.

In Indonesia and Peru, adjustments have been made with respect to the original data for some segments of the population. For details, see notes at the individual tables concerned.

Table 1: Unemployment rates by level of educational attainment and gender

Countries	*Gender*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Brazil	male	2.19%	1.78%	2.24%	2.79%	2.55%			1.58%
	female	6.55%	4.36%	7.96%	9.26%	7.47%			3.32%
	total	4.08%	2.83%	4.55%	5.50%	4.93%			2.47%
Chile	male	4.51%	4.17%	4.57%	5.52%	4.43%	5.54%	2.89%	3.12%
	female	5.60%	4.53%	3.90%	6.05%	6.89%	10.36%	3.19%	3.82%
	total	4.85%	4.25%	4.38%	5.67%	5.37%	7.49%	3.01%	3.40%
Peru	male	2.51%	1.15%	2.75%	3.04%	2.80%	5.34%	2.89%	3.90%
	female	4.87%	2.56%	4.02%	10.17%	8.42%	8.20%	7.89%	8.05%
	total	3.64%	2.01%	3.31%	5.61%	4.80%	6.72%	4.77%	5.67%
Uruguay	male	4.69%	6.66%	5.16%	4.47%	3.71%			0.34%
	female	9.27%	11.99%	11.53%	10.32%	8.23%			2.38%
	total	6.62%	8.50%	7.56%	7.18%	5.68%			1.60%
Indonesia	male	2.32%	0.84%	1.26%	2.68%	5.93%	5.33%	9.95%	8.10%
	female	2.13%	0.45%	1.52%	2.73%	9.34%	9.49%	15.37%	12.44%
	total	2.24%	0.65%	1.35%	2.70%	6.86%	7.13%	11.78%	9,75%
Malaysia	male	1.60%	1.63%	1.34%	2.11%	1.59%			1.12%
	female	1.21%	0.83%	0.80%	1.74%	1.41%			1.71%
	total	1.47%	1.22%	1.19%	2.02%	1.53%			1.34%
Thailand	male	2.27%	1.98%	1.81%	3.01%	3.89%	4.50%	3.18%	3.55%
	female	2.65%	2.32%	2.52%	2.11%	3.63%	4.91%	3.55%	3.81%
	total	2.45%	2.18%	2.14%	2.72%	3.79%	4.66%	3.37%	3.68%

Table 2: Underemployment rates by level of educational attainment and gender

Countries	*Gender*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Brazil	male	9.02%	10.06%	9.17%	8.59%	7.89%			8.08%
	female	30.47%	39.83%	34.82%	25.23%	23.02%			20.57%
	total	18.34%	22.23%	19.54%	15.57%	15.22%			14.49%
Chile	male	2.54%	3.82%	3.11%	2.60%	1.52%	0.83%	1.18%	1.15%
	female	7.52%	12.68%	10.04%	9.77%	4.73%	3.34%	3.48%	3.47%
	total	4.12%	5.90%	5.10%	4.66%	2.75%	1.84%	2.10%	2.08%
Peru	male	10.32%	7.98%	12.04%	9.08%	9.45%	15.69%	14.29%	14.87%
	female	21.50%	17.86%	23.36%	22.04%	26.98%	26.70%	22.95%	24,91%
	total	15.67%	14.02%	17.09%	13.75%	15.69%	21.01%	17.54%	19.13%
Uruguay	male	3.41%	3.36%	3.41%	3.39%	3.34%			3.85%
	female	8.19%	9.60%	8.93%	7.64%	6.58%			8.55%
	total	5.43%	5.51%	5.49%	5.36%	4.75%			6.75%
Indonesia	male	1.78%	1.02%	1.58%	2.32%	3.08%	3.71%	3.39%	3.52%
	female	20.77%	12.99%	17.72%	30.87%	53.61%	65.74%	54.33%	60.01%
	total	9.47%	6.96%	7.55%	10.03%	16.84%	30.50%	20.59%	24.92%
Malaysia	male	4.90%	9.47%	6.46%	3.70%	2.18%			5.27%
	female	10.02%	15.89%	10.83%	7.51%	5.63%			9.83%
	total	6.62%	12.76%	7.72%	4.62%	3.33%			6.99%
Thailand	male	2.46%	3.83%	2.83%	1.70%	1.09%	0.68%	0.50%	0.55%
	female	3.07%	4.58%	3.30%	1.99%	1.33%	2.16%	0.67%	0.96%
	total	2.74%	4.27%	3.05%	1.80%	1.18%	1.26%	0.59%	0.75%

Table 3: Un- and Underemployment rates by level of educational attainment and gender

Countries	*Gender*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Brazil	male	11.20%	11.83%	11.41%	11.37%	10.44%			9.66%
	female	37.01%	44.19%	42.78%	34.49%	30.48%			23.89%
	total	22.43%	25.07%	24.09%	21.07%	20.15%			16.97%
Chile	male	7.04%	7.98%	7.67%	8.12%	5.95%	6.37%	4.08%	4.28%
	female	13.12%	17.21%	13.94%	15.81%	11.62%	13.70%	6.68%	7.30%
	total	8.97%	10.15%	9.48%	10.33%	8.12%	9.33%	5.11%	5.48%
Peru	male	12.83%	9.13%	14.79%	12.11%	12.26%	21.03%	17.18%	18.77%
	female	26.37%	20.42%	27.38%	32.21%	35.40%	34.91%	30.83%	32,96%
	total	19.31%	16.03%	20.40%	19.37%	20.49%	27.74%	22.31%	24.80%
Uruguay	male	8.10%	10.02%	8.58%	7.86%	7.05%			4.19%
	female	17.46%	21.59%	20.46%	17.95%	14.81%			10.92%
	total	12.05%	14.00%	13.05%	12.54%	10.44%			8.34%
Indonesia	male	4.10%	1.86%	2.83%	5.01%	9.01%	9.05%	13.34%	11.62%
	female	22.90%	13.44%	19.23%	33.60%	62.96%	75.23%	69.70%	72.45%
	total	11.71%	7.61%	8.90%	12.72%	23.70%	37.63%	32.37%	34,67%
Malaysia	male	6.50%	11.11%	7.81%	5.81%	3.77%			6.39%
	female	11.23%	16.72%	11.63%	9.25%	7.04%			11.53%
	total	8.08%	13.98%	8.91%	6.65%	4.86%			8.33%
Thailand	male	4.73%	5.82%	4.65%	4.71%	4.98%	5.18%	3.69%	4.10%
	female	5.72%	6.90%	5.82%	4.10%	4.97%	7.07%	4.22%	4.76%
	total	5.19%	6.45%	5.19%	4.51%	4.97%	5.92%	3.96%	4.42%

Table 4: Informal sector employment rates by level of educational attainment and gender

Countries	*Gender*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*
Chile	male	37.63%	53.73%	47.57%	37.81%	27.37%	22.21%	9.30%
	female	45.55%	76.14%	69.45%	61.37%	29.22%	21.91%	9.03%
	total	40.15%	59.00%	53.87%	44.58%	28.08%	22.09%	9.19%
Peru1	male	42.20%	33.68%	45.37%	54.98%	50.71%	39.85%	24.04%
	female	69.88%	79.86%	79.64%	71.84%	60.24%	33.09%	25.73%
	total	55.44%	61.90%	60.65%	61.06%	54.10%	36.59%	24.68%
Thailand	male	71.63%	88.59%	82.50%	59.15%	43.28%	24.84%	16.29%
	female	74.99%	90.22%	85.26%	59.36%	42.04%	26.78%	12.28%
	total	73.18%	89.54%	83.78%	59.22%	42.82%	25.59%	14.23%

1 Original Peruvian data for ISCED 5b include an obvious reporting error for males aged 45-54 (over 250% of the labour force reported to be employed in the informal sector). This appears to be a wrong setting of the decimal point which was corrected here.

Table 5: Labour force participation rates by level of educational attainment and gender

Countries	*Gender*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Brazil	male	93.27%	88.98%	96.26%	94.08%	94.49%			95.03%
	female	65.97%	56.21%	64.31%	64.21%	75.66%			86.36%
	total	79.04%	71.85%	80.16%	78.72%	84.32%			90.37%
Chile	male	91.38%	86.46%	89.90%	94.11%	93.81%	93.19%	94.43%	94,32%
	female	40.38%	24.45%	32.55%	36.84%	53.35%	65.69%	80.61%	79,03%
	total	65.22%	54.14%	59.63%	65.05%	72.69%	79.73%	88.40%	87,57%
Peru	male	95.46%	94.70%	96.43%	95.93%	96.05%	95.85%	93.12%	94.23%
	female	73.60%	75.32%	72.49%	66.42%	68.76%	78.35%	81.51%	79.83%
	total	83.59%	81.84%	84.06%	82.67%	84.16%	86.52%	88.39%	87.52%
Uruguay	male	90.32%	79.10%	90.99%	95.13%	95.16%			95.86%
	female	62.47%	41.24%	56.43%	69.66%	76.12%			86.74%
	total	76.01%	60.09%	73.94%	81.35%	85.79%			90.02%
Indonesia	male	100%1	100%1	100%1	96.56%	94.54%	95.24%	95.83%	95,59%
	female	62.20%	68.84%	56.90%	45.15%	52.97%	82.00%	84.06%	83,02%
	total	81.23%	85.11%	78.51%	73.86%	77.90%	89.03%	91.51%	90,41%
Malaysia	male	94.08%	86.07%	93.07%	96.29%	96.80%			95.03%
	female	45.70%	39.01%	38.72%	39.81%	57.17%			84.15%
	total	69.47%	53.21%	66.27%	71.56%	78.66%			90.62%
Thailand	male	94.12%	83.99%	95.31%	95.38%	93.14%	96.57%	96.37%	96.43%
	female	76.55%	64.12%	77.77%	77.48%	79.31%	84.25%	91.85%	90.30%
	total	85.10%	71.16%	86.28%	88.74%	87.53%	91.36%	93.99%	93.35%

1 For low skilled males, Indonesia reported labour force rates above 100%. They were reduced here to 100% for consistency reasons.

Table 6: Unemployment rates by level of educational attainment and age

Countries	*Age*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED 5a/6 + 5b*
Brazil	15-19	13.78%	12.90%	14.19%					
	20-24	9.46%	8.97%	7.56%	0.00%	10.34%			
	25-29	5.86%	5.48%	5.14%	7.40%	6.68%			3.38%
	30-34	4.59%	2.82%	4.70%	5.70%	4.75%			2.53%
	35-44	3.66%	3.18%	3.97%	4.39%	4.14%			2.38%
	45-54	3.11%	2.71%	3.35%	4.59%	4.19%			2.10%
	55-64	2.59%	2.07%	4.35%	4.93%	4.07%			2.34%
	total 25-64	4.08%	2.83%	4.55%	5.50%	4.93%			2.47%
Chile	15-19	13.70%	14.71%	12.91%					
	20-24	14.07%	10.98%	10.10%	12.08%	15.87%			
	25-29	8.48%	7.73%	7.71%	8.70%	8.80%	10.57%	7.47%	7.88%
	30-34	5.69%	5.77%	4.83%	6.47%	6.04%	7.58%	2.82%	3.35%
	35-44	4.42%	4.67%	4.44%	5.05%	4.31%	6.12%	2.45%	2.73%
	45-54	3.17%	3.50%	3.22%	4.12%	2.95%	2.27%	0.77%	0.85%
	55-64	3.54%	3.30%	4.49%	4.06%	3.04%	11.29%	2.36%	2.85%
	total 25-64	4.85%	4.25%	4.38%	5.67%	5.37%	7.49%	3.01%	3.40%
Peru	15-19	8.42%	6.03%	9.03%					
	20-24	9.57%	6.17%	4.70%	9.83%	11.73%			
	25-29	6.02%	1.08%	3.79%	12.72%	6.36%	10.50%	8.01%	9.52%
	30-34	2.60%	0.46%	1.74%	2.86%	3.52%	4.50%	5.47%	4.98%
	35-44	2.83%	1.69%	3.41%	5.20%	4.08%	1.45%	1.37%	1.40%
	45-54	3.20%	2.98%	3.09%	0.00%	2.65%	7.11%	6.19%	6.52%
	55-64	4.22%	2.21%	5.62%	0.00%	12.25%	18.69%	8.07%	12.25%
	total 25-64	3.64%	2.01%	3.31%	5.61%	4.80%	6.72%	4.77%	5.67%
Uruguay	15-19	35.25%	26.18%	35.94%					
	20-24	19.07%	15.71%	20.25%	17.65%	19.61%			
	25-29	10.06%	25.19%	11.44%	10.76%	8.00%			3.21%
	30-34	6.41%	8.04%	8.82%	7.94%	4.39%			1.23%
	35-44	6.54%	8.47%	8.29%	5.51%	6.06%			1.47%
	45-54	5.38%	8.23%	5.26%	5.58%	4.24%			1.29%
	55-64	5.28%	6.91%	5.12%	4.31%	3.69%			1.53%
	total 25-64	6.62%	8.50%	7.56%	7.18%	5.68%			1.60%
Indonesia	15-19	12.34%	8.17%	13.36%					
	20-24	18.45%	6.72%	8.03%	15.09%	33.02%			
	25-29	8.18%	1.82%	3.25%	5.50%	15.17%	20.46%	30.10%	26.32%
	30-34	3.33%	1.43%	1.43%	2.62%	6.88%	6.99%	11.53%	9.83%
	35-44	1.29%	0.87%	1.21%	1.54%	2.23%	2.54%	2.35%	2.44%
	45-54	0.68%	0.50%	0.72%	0.98%	1.33%	1.13%	0.78%	0.96%
	55-64	0.28%	0.18%	0.27%	1.57%	1.36%	1.93%	0.00%	1.02%
	total 25-64	2.24%	0.65%	1.35%	2.70%	6.86%	7.13%	11.78%	9.75%
Malaysia	15-19	8.94%	7.87%	9.08%					
	20-24	6.46%	2.91%	3.95%	6.39%	7.43%			
	25-29	2.57%	1.22%	1.75%	3.02%	2.46%			3.45%
	30-34	1.42%	2.24%	0.96%	1.95%	1.41%			0.71%
	35-44	1.13%	0.96%	1.11%	1.66%	1.07%			0.39%
	45-54	1.05%	1.18%	1.11%	1.39%	0.67%			0.33%
	55-64	1.17%	1.19%	1.28%	1.14%	0.66%			0.00%
	total 25-64	1.47%	1.22%	1.19%	2.02%	1.53%			1.34%
Thailand	15-19	6.78%	0.83%	6.96%					
	20-24	6.13%	2.28%	5.23%	6.44%	9.55%			
	25-29	4.24%	3.97%	3.18%	3.64%	5.99%	7.82%	8.00%	7.94%
	30-34	2.78%	2.55%	2.41%	3.02%	2.59%	3.28%	5.20%	4.56%
	35-44	2.20%	2.26%	2.23%	2.16%	2.32%	3.99%	1.46%	1.92%
	45-54	1.48%	1.56%	1.46%	1.89%	3.00%	0.14%	0.68%	0.63%
	55-64	1.55%	2.14%	1.42%	0.55%	0.76%	0.00%	0.55%	0.47%
	total 25-64	2.45%	2.18%	2.14%	2.72%	3.79%	4.66%	3.37%	3.68%

Table 7: Underemployment rates by level of educational attainment and age

Countries	*Age*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Brazil	15-19	32.23%	39.36%	28.98%					
	20-24	21.72%	24.70%	22.50%	20.31%	21.13%			
	25-29	18.81%	23.78%	21.05%	16.46%	16.65%			15.54%
	30-34	17.52%	22.95%	19.88%	15.33%	14.89%			13.89%
	35-44	16.35%	20.24%	17.66%	14.11%	13.41%			11.95%
	45-54	18.98%	21.39%	17.46%	15.49%	15.90%			15.89%
	55-64	25.64%	26.61%	23.77%	23.74%	21.65%			24.27%
	total 25-64	18.34%	22.23%	19.54%	15.57%	15.22%			14.49%
Chile	15-19	4.39%	4.57%	4.25%					
	20-24	2.96%	3.89%	4.22%	3.17%	2.62%			
	25-29	2.98%	4.43%	4.90%	3.93%	2.28%	1.89%	1.74%	1,76%
	30-34	3.78%	6.35%	4.33%	4.46%	2.58%	0.96%	3.02%	2,79%
	35-44	4.27%	6.77%	5.11%	4.91%	2.89%	1.07%	1.91%	1,85%
	45-54	4.40%	5.55%	4.70%	5.04%	3.07%	4.27%	2.12%	2,23%
	55-64	5.04%	5.69%	6.28%	4.47%	3.37%	4.71%	1.33%	1,52%
	total 25-64	4.12%	5.90%	5.10%	4.66%	2.75%	1.84%	2.10%	2,08%
Peru	15-19	24.13%	23.94%	24.18%					
	20-24	19.34%	16.46%	21.19%	16.12%	19.82%			
	25-29	17.79%	19.83%	19.74%	17.39%	15.14%	19.67%	20.11%	19.84%
	30-34	16.68%	12.63%	20.25%	15.89%	16.32%	21.78%	17.17%	19.49%
	35-44	16.84%	16.92%	16.26%	12.40%	16.34%	26.28%	16.43%	20.26%
	45-54	13.67%	12.98%	13.74%	9.11%	16.13%	15.74%	14.77%	15.12%
	55-64	12.11%	10.44%	17.89%	5.06%	10.59%	12.95%	25.37%	20.48%
	total 25-64	15.67%	14.02%	17.09%	13.75%	15.69%	21.01%	17.54%	19.13%
Uruguay	15-19	7.74%	10.59%	7.52%					
	20-24	7.94%	12.67%	7.87%	7.77%	7.74%			
	25-29	6.83%	4.85%	7.18%	7.02%	6.24%			8.56%
	30-34	5.55%	4.61%	5.66%	4.79%	4.60%			8.86%
	35-44	5.82%	9.14%	5.88%	5.42%	4.62%			5.58%
	45-54	5.17%	6.78%	4.94%	4.08%	3.78%			6.37%
	55-64	3.48%	2.53%	3.89%	4.12%	3.45%			5.60%
	total 25-64	5.43%	5.51%	5.49%	5.36%	4.75%			6.75%
Indonesia	15-19	11.97%	26.68%	8.37%					
	20-24	14.27%	40.08%	12.96%	8.78%	12.91%			
	25-29	15.63%	29.26%	11.07%	8.91%	14.01%	32.40%	18.03%	23,66%
	30-34	12.78%	15.41%	9.14%	10.12%	13.47%	31.45%	16.46%	22,09%
	35-44	9.89%	7.97%	6.89%	10.50%	18.07%	26.84%	20.85%	23,67%
	45-54	7.65%	4.77%	6.12%	10.12%	21.07%	30.92%	26.73%	28,81%
	55-64	3.92%	1.72%	5.16%	11.66%	32.89%	40.61%	39.43%	40,05%
	total 25-64	9.47%	6.96%	7.55%	10.03%	16.84%	30.50%	20.59%	24.92%
Malaysia	15-19	4.63%	5.62%	4.51%					
	20-24	2.84%	4.21%	2.63%	2.83%	2.84%			
	25-29	3.71%	4.57%	3.15%	3.59%	2.88%			6.77%
	30-34	4.60%	7.55%	5.18%	4.73%	3.08%			6.14%
	35-44	5.60%	8.53%	6.45%	4.41%	3.79%			7.24%
	45-54	8.94%	14.27%	9.07%	6.06%	3.65%			7.36%
	55-64	15.32%	17.70%	14.66%	8.55%	4.64%			12.11%
	total 25-64	6.62%	12.76%	7.72%	4.62%	3.33%			6.99%
Thailand	15-19	3.91%	10.36%	3.72%					
	20-24	2.94%	3.33%	3.36%	2.60%	1.80%			
	25-29	2.85%	5.33%	3.40%	2.35%	1.86%	1.40%	1.08%	1.18%
	30-34	2.40%	5.32%	2.72%	2.23%	0.90%	0.54%	0.38%	0.43%
	35-44	2.41%	4.21%	2.70%	0.81%	0.80%	2.28%	0.62%	0.92%
	45-54	3.13%	4.65%	3.36%	0.72%	0.23%	0.00%	0.29%	0.26%
	55-64	3.27%	3.31%	3.39%	5.53%	0.54%	0.00%	0.10%	0.09%
	total 25-64	2.74%	4.27%	3.05%	1.80%	1.18%	1.26%	0.59%	0.75%

Table 8: Un- and Underemployment rates by level of educational attainment and age

Countries	*Age*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Brazil	15-19	46.02%	52.26%	43.17%					
	20-24	31.17%	33.67%	30.07%	32.11%	31.48%			
	25-29	24.67%	29.26%	26.19%	23.87%	23.33%			18.92%
	30-34	22.11%	25.76%	24.58%	21.03%	19.63%			16.42%
	35-44	20.01%	23.42%	21.63%	18.50%	17.55%			14.33%
	45-54	22.08%	24.10%	20.81%	20.08%	20.09%			17.98%
	55-64	28.23%	28.68%	28.12%	28.67%	25.72%			26.61%
	total 25-64	22.43%	25.07%	24.09%	21.07%	20.15%			16.97%
Chile	15-19	18.09%	19.28%	17.16%					
	20-24	17.04%	14.87%	14.32%	15.26%	18.49%			
	25-29	11.46%	12.15%	12.61%	12.63%	11.08%	12.46%	9.21%	9.64%
	30-34	9.47%	12.13%	9.16%	10.93%	8.62%	8.54%	5.84%	6.14%
	35-44	8.68%	11.44%	9.55%	9.96%	7.20%	7.19%	4.36%	4.58%
	45-54	7.58%	9.05%	7.92%	9.16%	6.03%	6.54%	2.89%	3.08%
	55-64	8.58%	8.99%	10.77%	8.53%	6.42%	16.00%	3.69%	4.37%
	total 25-64	8.97%	10.15%	9.48%	10.33%	8.12%	9.33%	5.11%	5.48%
Peru	15-19	32.55%	29.97%	33.21%					
	20-24	28.92%	22.63%	25.89%	25.95%	31.55%			
	25-29	23.81%	20.91%	23.53%	30.11%	21.50%	30.18%	28.11%	29.36%
	30-34	19.28%	13.10%	21.99%	18.75%	19.84%	26.28%	22.64%	24.47%
	35-44	19.67%	18.61%	19.66%	17.61%	20.41%	27.72%	17.79%	21.66%
	45-54	16.87%	15.96%	16.84%	9.11%	18.78%	22.84%	20.96%	21.64%
	55-64	16.33%	12.64%	23.51%	5.06%	22.85%	31.64%	33.44%	32.73%
	total 25-64	19.31%	16.03%	20.40%	19.37%	20.49%	27.74%	22.31%	24.80%
Uruguay	15-19	42.99%	36.77%	43.46%					
	20-24	27.01%	28.37%	28.12%	25.42%	27.35%			
	25-29	16.89%	30.04%	18.62%	17.79%	14.24%			11.77%
	30-34	11.96%	12.65%	14.48%	12.73%	8.99%			10.09%
	35-44	12.36%	17.61%	14.18%	10.93%	10.69%			7.05%
	45-54	10.56%	15.01%	10.19%	9.66%	8.02%			7.67%
	55-64	8.76%	9.44%	9.00%	8.43%	7.14%			7.14%
	total 25-64	12.05%	14.00%	13.05%	12.54%	10.44%			8.34%
Indonesia	15-19	24.31%	34.85%	21.73%					
	20-24	32.72%	46.80%	20.98%	23.87%	45.93%			
	25-29	23.81%	31.08%	14.32%	14.41%	29.18%	52.86%	48.13%	49,98%
	30-34	16.12%	16.84%	10.56%	12.74%	20.35%	38.44%	27.99%	31,92%
	35-44	11.18%	8.85%	8.10%	12.05%	20.30%	29.37%	23.20%	26,11%
	45-54	8.33%	5.26%	6.83%	11.10%	22.41%	32.06%	27.51%	29,77%
	55-64	4.20%	1.90%	5.43%	13.23%	34.25%	42.54%	39.43%	41,07%
	total 25-64	11.71%	7.61%	8.90%	12.72%	23.70%	37.63%	32.37%	34,67%
Malaysia	15-19	13.58%	13.48%	13.59%					
	20-24	9.30%	7.12%	6.58%	9.22%	10.27%			
	25-29	6.28%	5.79%	4.90%	6.61%	5.34%			10.22%
	30-34	6.02%	9.80%	6.14%	6.68%	4.48%			6.84%
	35-44	6.73%	9.49%	7.56%	6.07%	4.86%			7.64%
	45-54	10.00%	15.44%	10.18%	7.45%	4.31%			7.69%
	55-64	16.49%	18.89%	15.94%	9.69%	5.30%			12.11%
	total 25-64	8.08%	13.98%	8.91%	6.65%	4.86%			8.33%
Thailand	15-19	10.69%	11.19%	10.68%					
	20-24	9.07%	5.61%	8.59%	9.04%	11.35%			
	25-29	7.09%	9.30%	6.58%	5.99%	7.85%	9.22%	9.08%	9.12%
	30-34	5.17%	7.87%	5.13%	5.25%	3.49%	3.82%	5.57%	4.99%
	35-44	4.60%	6.47%	4.92%	2.97%	3.12%	6.26%	2.09%	2.85%
	45-54	4.61%	6.21%	4.82%	2.61%	3.23%	0.14%	0.97%	0.89%
	55-64	4.82%	5.45%	4.81%	6.08%	1.31%	0.00%	0.65%	0.56%
	total 25-64	5.19%	6.45%	5.19%	4.51%	4.97%	5.92%	3.96%	4.42%

Table 9: Informal sector employment rates by level of educational attainment and age

Countries	*Age*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*
Chile	15-19	47.50%	46.94%	47.94%				
	20-24	25.63%	42.08%	49.31%	31.27%	18.35%		
	25-29	28.08%	48.23%	47.22%	37.04%	21.73%	18.88%	8.28%
	30-34	33.84%	50.63%	51.97%	42.10%	26.79%	14.56%	6.91%
	35-44	39.20%	56.07%	52.97%	46.12%	29.24%	23.98%	10.76%
	45-54	45.85%	61.08%	53.87%	48.52%	32.59%	35.66%	8.50%
	55-64	54.90%	65.31%	59.10%	49.81%	36.81%	33.88%	12.38%
	total 25-64	40.15%	59.00%	53.87%	44.58%	28.08%	22.09%	9.19%
Peru	15-19	81.24%	81.70%	81.12%				
	20-24	67.85%	77.74%	72.32%	72.09%	63.91%		
	25-29	59.86%	78.64%	68.85%	66.02%	57.16%	36.09%	30.88%
	30-34	56.06%	67.30%	65.02%	60.50%	56.00%	32.02%	20.16%
	35-44	55.79%	66.61%	60.80%	55.85%	52.30%	37.76%	25.16%
	45-541	54.60%	58.76%	59.31%	65.65%	50.84%	35.76%	21.32%
	55-64	49.06%	51.59%	42.16%	53.28%	48.24%	53.16%	28.31%
	total 25-64	55.44%	61.90%	60.65%	61.06%	54.10%	36.59%	24.68%
Thailand	15-19	76.36%	67.81%	76.62%				
	20-24	67.68%	81.62%	75.05%	59.07%	49.61%		
	25-29	63.01%	89.66%	77.66%	59.61%	40.27%	19.60%	14.84%
	30-34	68.50%	84.68%	80.56%	61.95%	48.40%	32.00%	16.36%
	35-44	72.51%	86.65%	83.52%	60.78%	45.48%	26.98%	15.10%
	45-54	79.60%	90.17%	87.22%	52.10%	34.08%	23.85%	9.93%
	55-64	86.50%	93.75%	90.54%	52.04%	25.38%	11.76%	10.47%
	total 25-64	73.18%	89.54%	83.78%	59.22%	42.82%	25.59%	14.23%

1 Original Peruvian data for ISCED 5b include an obvious reporting error for males aged 45-54 (over 250% of the labour force reported to be employed in the informal sector). This appears to be a wrong setting of the decimal point which was corrected here.

Table 10: Labour force participation rates by level of educational attainment and age

Countries	*Age*	*All levels of education*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
		total	*< ISCED 1*	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Brazil	15-19	61.20%	57.41%	63.10%					
	20-24	81.90%	79.37%	79.68%	82.84%	84.96%			
	25-29	84.21%	82.94%	80.59%	82.32%	89.84%			96.23%
	30-34	84.13%	81.46%	81.30%	82.54%	88.02%			94.78%
	35-44	84.29%	81.14%	81.92%	83.04%	87.30%			95.44%
	45-54	75.23%	73.48%	72.81%	72.10%	77.35%			87.00%
	55-64	55.69%	56.67%	55.88%	47.60%	51.03%			62.55%
	total 25-64	79.04%	71.85%	80.16%	78.72%	84.32%			90.37%
Chile	15-19	31.39%	35.59%	28.73%					
	20-24	57.82%	56.38%	61.68%	63.47%	54.95%			
	25-29	69.05%	54.96%	60.77%	64.65%	74.24%	79.83%	79.88%	79,88%
	30-34	70.12%	57.67%	65.68%	66.97%	74.30%	83.02%	90.68%	89,75%
	35-44	70.50%	60.36%	64.11%	68.61%	75.98%	83.53%	91.25%	90,59%
	45-54	65.40%	56.87%	63.59%	65.19%	73.13%	77.68%	93.36%	92,42%
	55-64	48.28%	45.62%	47.42%	48.04%	51.83%	54.67%	79.19%	77,27%
	total 25-64	65.22%	54.14%	59.63%	65.05%	72.69%	79.73%	88.40%	87,57%
Peru	15-19	71.04%	81.12%	68.85%					
	20-24	76.92%	76.54%	82.84%	83.42%	73.86%			
	25-29	84.31%	83.57%	81.25%	82.52%	85.46%	87.40%	84.96%	86.42%
	30-34	87.06%	84.27%	88.47%	87.59%	87.03%	87.47%	91.71%	89.52%
	35-44	87.06%	85.19%	88.44%	85.33%	85.99%	92.16%	92.90%	92.61%
	45-54	83.76%	83.84%	86.54%	79.76%	80.47%	79.57%	88.31%	84.94%
	55-64	72.19%	74.70%	66.35%	56.45%	67.16%	73.33%	72.10%	72.58%
	total 25-64	83.59%	81.84%	84.06%	82.67%	84.16%	86.52%	88.39%	87.52%
Uruguay	15-19	51.50%	41.89%	52.41%					
	20-24	79.99%	62.56%	81.03%	87.16%	74.27%			
	25-29	83.49%	50.91%	80.24%	86.86%	88.93%			94.22%
	30-34	84.24%	60.94%	82.10%	85.02%	89.43%			97.23%
	35-44	84.83%	68.69%	82.71%	86.74%	91.10%			96.89%
	45-54	78.02%	70.75%	76.49%	79.52%	84.45%			91.56%
	55-64	52.97%	50.30%	51.48%	54.07%	61.82%			62.78%
	total 25-64	76.01%	60.09%	73.94%	81.35%	85.79%			90.02%
Indonesia	15-19	49.61%	61.22%	47.42%					
	20-24	65.86%	67.19%	66.85%	68.17%	63.36%			
	25-29	72.00%	67.71%	70.65%	70.54%	74.08%	87.28%	89.50%	88.62%
	30-34	76.06%	73.85%	74.03%	74.77%	78.98%	90.16%	92.23%	91.45%
	35-44	79.79%	78.76%	79.19%	76.32%	83.46%	91.69%	94.22%	93.01%
	45-54	79.42%	78.97%	79.83%	76.20%	80.35%	89.63%	93.48%	91.53%
	55-64	100%1	100%1	95.36%	68.99%	60.00%	77.34%	77.68%	77.50%
	total 25-64	81.23%	85.11%	78.51%	73.86%	77.90%	89.03%	91.51%	90,41%
Malaysia	15-19	68.79%	53.45%	71.49%					
	20-24	79.06%	57.22%	76.56%	78.95%	81.23%			
	25-29	76.58%	58.78%	71.11%	72.66%	79.86%			90.69%
	30-34	73.76%	58.40%	70.88%	69.20%	77.47%			92.42%
	35-44	74.05%	61.37%	69.39%	73.56%	81.04%			94.95%
	45-54	69.01%	58.88%	67.52%	75.31%	81.01%			91.55%
	55-64	45.95%	42.41%	51.64%	46.12%	41.48%			50.94%
	total 25-64	69.47%	53.21%	66.27%	71.56%	78.66%			90.62%
Thailand	15-19	57.66%	47.55%	58.02%					
	20-24	75.95%	59.51%	84.83%	86.91%	50.14%			
	25-29	87.45%	66.25%	87.82%	88.89%	86.84%	92.53%	95.07%	94.23%
	30-34	90.03%	76.69%	90.50%	91.34%	90.80%	92.50%	96.12%	94.88%
	35-44	90.40%	84.06%	90.67%	91.55%	90.50%	93.29%	94.85%	94.56%
	45-54	85.91%	78.27%	86.85%	86.89%	87.16%	79.68%	96.69%	94.52%
	55-64	65.45%	56.42%	69.97%	66.16%	58.72%	77.46%	71.20%	72.00%
	total 25-64	85.10%	71.16%	86.28%	88.74%	87.53%	91.36%	93.99%	93.35%

1 For low skilled persons, aged 55-64 Indonesia reported labour force rates above 100%. They were reduced here to 100% for consistency reasons.

Table 11: Mean incomes from employment by level of educational attainment and age (relative to mean incomes at ISCED 3)

Countries	*Age*	*No schooling*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*
			< ISCED 1	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*
Brazil	15-24	33%	34%	49%	63%	100%		
	25-29	28%	36%	48%	67%	100%		223%
	30-34	24%	31%	43%	64%	100%		232%
	35-44	25%	36%	43%	63%	100%		232%
	45-54	22%	35%	46%	67%	100%		236%
	55-64	18%	34%	46%	66%	100%		231%
	total 25-64	26%	43%	41%	65%	100%		250%
Chile	15-24	59%	61%	63%	77%	100%		
	25-29	42%	55%	52%	65%	100%	114%	299%
	30-34	44%	48%	49%	63%	100%	135%	263%
	35-44	35%	42%	46%	56%	100%	139%	288%
	45-54	34%	36%	41%	54%	100%	130%	220%
	55-64	30%	36%	44%	62%	100%	95%	180%
	total 25-64	41%	46%	51%	63%	100%	130%	180%
Peru	15-24	33%	49%	57%	67%	100%		
	25-29	23%	44%	58%	84%	100%	123%	132%
	30-34	22%	40%	58%	80%	100%	113%	139%
	35-44	21%	40%	61%	88%	100%	114%	148%
	45-54	24%	41%	59%	84%	100%	124%	153%
	55-64	21%	44%	54%	89%	100%	102%	138%
	total 25-64	25%	46%	63%	86%	100%	117%	153%
Uruguay	15-24	60%	53%	68%	81%	100%		
	25-29	38%	52%	69%	84%	100%		149%
	30-34	59%	45%	60%	85%	100%		140%
	35-44	29%	40%	59%	81%	100%		154%
	45-54	28%	40%	53%	81%	100%		147%
	55-64	27%	35%	50%	92%	100%		141%
	total 25-64	35%	45%	60%	84%	100%		156%
Thailand	15-24	46%	56%	59%	79%	100%		
	25-29	26%	43%	46%	73%	100%	179%	66%
	30-34	30%	43%	44%	78%	100%	202%	78%
	35-44	21%	27%	32%	66%	100%	175%	59%
	45-54	15%	17%	20%	64%	100%	149%	106%
	55-64	11%	12%	15%	62%	100%	158%	15%
	total 25-64	25%	31%	36%	75%	100%	203%	93%

Note: Given that the totals (25-64) are quotients of weighted averages of earnings across different age groups, they can differ significantly from what one would expect looking at each age cohort individually (see Figure 19). At ISCED 5a/6 in Brazil, for instance, no individual age cohort shows relative earnings as high as the overall 250%. This is possible due to the different weights of age groups at ISCED 3 and 5a/6.

Table 12: Women's mean incomes from employment as a % of men's, by level of educational attainment

Countries	*No schooling*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*
		< ISCED 1	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*
Brazil	66%	49%	53%	53%	54%		51%
Chile	82%	73%	71%	73%	80%	73%	58%
Peru	35%	38%	42%	47%	49%	56%	56%
Uruguay	66%	60%	56%	54%	59%		48%
Thailand	94%	88%	79%	89%	89%	76%	55%

Table 13: Combined un- and underemployment by level of educational attainment, gender and age

Countries	*Age*	*Gender*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
			< ISCED 1	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED 5a/6 + 5b*
Brazil	15-19	male	49%	35%					
		female	59%	57%					
	20-24	male	27%	18%	22%	22%			
		female	47%	50%	45%	39%			
	25-29	male	16%	13%	12%	13%			11%
		female	50%	47%	39%	33%			24%
	30-34	male	11%	11%	10%	9%			8%
		female	48%	44%	36%	31%			23%
	35-44	male	10%	10%	10%	9%			7%
		female	41%	39%	30%	28%			21%
	45-54	male	12%	13%	12%	12%			11%
		female	41%	33%	33%	30%			28%
	55-64	male	14%	17%	24%	17%			19%
		female	54%	46%	37%	39%			43%
Chile	15-19	male	20%	17%					
		female	14%	17%					
	20-24	male	14%	14%	14%	16%			
		female	21%	18%	19%	22%			
	25-29	male	11%	12%	11%	9%	9%	10%	10%
		female	17%	14%	17%	14%	16%	9%	10%
	30-34	male	9%	7%	8%	6%	7%	3%	4%
		female	23%	16%	18%	13%	11%	9%	9%
	35-44	male	8%	7%	7%	5%	6%	3%	4%
		female	20%	16%	16%	11%	10%	6%	6%
	44-54	male	7%	6%	7%	4%	3%	2%	2%
		female	16%	11%	14%	9%	15%	5%	5%
	55-64	male	8%	9%	7%	6%	6%	4%	4%
		female	14%	15%	12%	6%	33%	3%	5%

Table 13 (cont.)

Countries	*Age*	*Gender*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
			< ISCED 1	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Peru	15-19	male	n.a.	35%					
		female	n.a.	31%					
	20-24	male		19%	21%	27%			
		female	26%	34%	33%	39%			
	25-29	male	n.a.	17%	21%	12%	21%	24%	22%
		female	24%	29%	44%	36%	40%	31%	36%
	30-34	male		17%	13%	14%	21%	14%	17%
		female	18%	28%	28%	32%	31%	34%	32%
	35-44	male	6%	11%	10%	11%	19%	15%	16%
		female	25%	30%	30%	36%	35%	23%	29%
	44-54	male	n.a.	14%	2%	11%	16%	18%	17%
		female	20%	21%	22%	35%	35%	32%	34%
	55-64	male	11%	21%	4%	17%	38%	24%	29%
		female	14%	29%	15%	53%	n.a.	74%	n.a.
Uruguay	15-19	male	37%	40%					
		female	37%	52%					
	19-24	male	20%	22%	20%	22%			
		female	59%	41%	32%	32%			
	25-29	male	17%	14%	11%	9%			2%
		female	81%	29%	26%	20%			17%
	29-34	male	5%	9%	9%	7%			6%
		female	31%	24%	17%	12%			13%
	35-44	male	14%	8%	6%	7%			4%
		female	25%	23%	16%	15%			9%
	45-54	male	10%	6%	7%	6%			4%
		female	23%	17%	12%	11%			10%
	55-64	male	8%	7%	5%	6%			6%
		female	13%	12%	13%	9%			9%

Table 13 (cont.)

Countries	*Age*	*Gender*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
			< ISCED 1	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* 5a/6 + 5b
Indonesia	15-19	male	9%	13%					
		female	81%	34%					
	20-24	male	10%	10%	17%	35%			
		female	92%	37%	37%	62%			
	25-29	male	6%	5%	7%	16%	22%	35%	30%
		female	55%	27%	31%	54%	77%	63%	69%
	30-34	male	4%	3%	5%	8%	11%	13%	12%
		female	28%	21%	31%	50%	69%	53%	60%
	35-44	male	3%	3%	4%	5%	6%	5%	5%
		female	15%	16%	34%	68%	63%	73%	67%
	44-54	male	1%	2%	4%	5%	4%	5%	5%
		female	9%	16%	35%	79%	83%	100%	93%
	55-64	male	1%	1%	4%	7%	4%	5%	5%
		female	4%	19%	49%	100%	100%	100%	100%
Malaysia	15-19	male	10%	13%					
		female	19%	14%					
	19-24	male	5%	6%	9%	10%			
		female	12%	7%	9%	11%			
	25-29	male	5%	4%	6%	4%	8%		8%
		female	7%	8%	8%	7%	12%		12%
	29-34	male	5%	4%	5%	3%	5%		5%
		female	16%	10%	11%	7%	10%		10%
	35-44	male	7%	6%	5%	4%	6%		6%
		female	12%	10%	10%	8%	11%		11%
	45-54	male	13%	9%	7%	4%	6%		6%
		female	17%	13%	8%	7%	12%		12%
	55-64	male	16%	15%	8%	5%	7%		7%
		female	22%	20%	22%	7%	41%		41%

Table 13 (cont.)

Countries	*Age*	*Gender*	*Uncompleted primary*	*Completed primary*	*Lower secondary education*	*Upper secondary education*	*Tertiary-type B education*	*Tertiary-type A and advanced research programmes*	*total tertiary education*
			< ISCED 1	*ISCED 1*	*ISCED 2*	*ISCED 3*	*ISCED 5b*	*ISCED 5a/6*	*ISCED* **5a/6 + 5b**
Thailand	15-19	male	8%	10%					
		female	16%	12%					
	20-24	male	3%	11%	11%	12%			
		female	8%	6%	6%	11%			
	25-29	male	9%	6%	7%	8%	9%	10%	9%
		female	9%	7%	5%	8%	10%	9%	9%
	30-34	male	9%	5%	5%	3%	4%	5%	5%
		female	7%	6%	6%	4%	4%	6%	5%
	35-44	male	7%	5%	3%	3%	5%	2%	3%
		female	6%	5%	3%	3%	8%	2%	3%
	45-54	male	4%	4%	3%	3%	0%	2%	1%
		female	8%	6%	1%	4%	0%	0%	0%
	55-64	male	4%	4%	8%	2%	0%	0%	0%
		female	6%	6%	0%	0%	0%	2%	1%

Table 14: Share of population with at least upper secondary attainment (≥ ISCED 3)

Countries	*20-24*	*25-29*	*30-34*	*45-44*	*45-54*	*55-64*
Brazil	30%	30%	31%	30%	25%	16%
Chile	60%	55%	47%	40%	28%	18%
Peru	59%	55%	47%	40%	26%	16%
Uruguay	32%	38%	37%	32%	25%	16%
Indonesia	36%	31%	27%	16%	11%	6%
Malaysia	57%	51%	45%	33%	18%	7%
Thailand	31%	25%	20%	16%	8%	5%

Table 15: Share of population with at least lower secondary attainment (≥ ISCED 2)

Countries	*20-24*	*25-29*	*30-34*	*45-44*	*45-54*	*55-64*
Brazil	52%	49%	49%	45%	36%	25%
Chile	85%	80%	74%	68%	46%	30%
Peru	69%	64%	55%	46%	30%	18%
Uruguay	61%	61%	54%	47%	37%	24%
Indonesia	56%	49%	40%	26%	19%	11%
Malaysia	81%	77%	70%	54%	31%	12%
Thailand	48%	39%	32%	24%	14%	8%